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ON

DISEASES OF THE CHEST,

UNDER THE DIRECTION OF

HORACE DOBELL, M.D., ETC., ETC.,

CONSULTING PHYSICIAN TO THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST, LATE SENIOR PHYSICIAN TO THE HOSPITAL, ETC., ETC.

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> BACON, *Advancement of Learning.*

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VOL. III.

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"A great recommendation of Dr. Dobell's reports is their readable character. They have all that compact, well-arranged look which infers a good method of putting them together. As you read, you are struck with their pointedness, as if, by some ingenious process of condensation, they had been divested of all superfluousness, only that which is essentially interesting being retained, so that whether you read through the book consecutively, or dip into any part of it *par hasard*, you are equally gratified. Both, therefore, to those who make Chest diseases a dominant study, and to the general practitioner, this volume will be found full of value. It will inspire emulation, by showing how steady is the progress in widely distant parts of the world, of this particular current in pathological study, and it must, eventually, have this excellent practical result, of more exactly determining the principles of treatment, which, after all, is the most directly useful branch of medicine. We can only hope, therefore, that the commercial success of this publication will be such as not to deter its projector from going on with it, so that all its possible usefulness may be compassed, and its issue become permanent."—*Australian Medical Journal*, February, 1877.

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"Six years ago Dr. Dobell published two volumes containing an extraordinary amount of information, of a kind which could not have been obtained in any way, other than that adopted by him, entitled 'Progress of Practical and Scientific Medicine in different parts of the World.' He had communicated, at a great sacrifice of his time, and at obviously very considerable cost, and necessarily in the face of great difficulties, with medical men in every civilised corner of the globe, and he had received a great number of replies, all furnishing information of the most valuable kind. It was next to impossible that an undertaking of this sort could be continuously carried on by a single individual. The wonder is that Dr. Dobell succeeded in going to the extent of two volumes. Such as they are, however, they remain, even apart from the intrinsic value they possess, a contribution to the current history of medicine, and a monument of what industry and determination can accomplish.

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"So many admirable contributions from so many accomplished practitioners—some of whom exercise their calling in localities that we are accustomed to regard as beyond the pale of scientific comity—are comprehended in this book, that we are at once abashed and gratified; abashed that we should have thought ourselves in advance of some who are clearly our superiors, and gratified that medical research should have extended so far beyond what we anticipated.

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"A most interesting and instructive volume. A retrospect of all that has been published on Diseases of the Chest in the year.

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CONTENTS.

To secure at once punctuality in publication, and facility of reference, the Reports of Countries have been put to press as they arrived, and the following Alphabetical List is given, to show the page at which each Report may be found.

Full details are given in a copious analytical Index at pages 411 to 438.

	PAGE
AUSTRIA AND HUNGARY	324
AUSTRALIA	56
BRITISH KAFFRARIA	40
CANADA	51
CHINA	25
FRANCE	151
GERMANY	377
ITALY	70
JAPAN	1
RUSSIA	105
SPAIN	64
UNITED KINGDOM OF GREAT BRITAIN AND IRELAND	256
UNITED STATES OF AMERICA	133

Numerous works and papers from their Authors or Publishers, and the following Journals "in Exchange" from their Editors, are acknowledged with thanks.

American Journal of the Medical Sciences.
Annual Report of State Board of Health (Massachusetts).
Annali Universali di Medicina e Chirurgia.
Army Medical Reports (British).
Australian Medical Journal.
Boston Medical and Surgical Journal.
British and Foreign Medico-Chirurgical Review.
Canada Medical and Surgical Journal.
Compendium of the Medical Sciences (American).
Detroit Review of Medicine. and Detroit Medical Journal.
Dorpater Medicinische Zeitschrift (Dorpat).
Gazette des Hopitaux.
Gazetta Medica di Roma.
Giornale della Acad. di Med. di Torino.
Glasgow Medical Journal.
Guy's Hospital Gazette.
Guy's Hospital Reports.
Health Officers' Reports, Shanghai.
Il Morgagni Napoli.
Indian Medical Gazette.
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L'Imperziale Firenze.
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Medical and Surgical Reporter (Philadelphia).
Medicinsky Vjestnik.
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Rivista Clinica di Bologna.
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St. Bartholomew's Hospital Reports.
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The Lancet (London).
Transactions of various United States' Medical Societies.
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REPORTS

ON THE

ANATOMY, PHYSIOLOGY, PATHOLOGY, ETIOLOGY, AND THERAPEUTICS OF THE THORACIC ORGANS, AND THEIR IMMEDIATE ASSOCIATES.

⁂ The responsibility for the contents of each Report rests entirely with the Reporter whose name appears at its head.

JAPAN.

(*Report by* Wm. Anderson, L.R.C.P. Lond., F.R.C.S. Eng., etc., etc.; Professor of Surgery and Anatomy, Imperial Naval Medical College, Yedo; Medical Officer to H. B. M. Legation, Yedo, etc.).

Japan, as a country newly opened to scientific investigation, offers many obstacles to the construction of a satisfactory account of its diseases. The first difficulty in the way of the enquirer is the utter absence of past medical records of any value, the science of medicine having been represented, until the establishment of European schools, by the curiously nonsensical system of the Chinese. Surgery cannot be said to have existed at all, and midwifery, though systematized a little more than a century ago by a man of great experience and considerable powers of observation, was rendered wholly unsound by its erroneous anatomical basis. Anatomy was mythical; "Physiology" and "pathology" referred every normal and abnormal phenomenon to interferences with the inter-relations of the active and passive coefficients of Nature—the "yang" and "yin" of the Chinese, the "yo" and "in" of Japan—and of the five "elements," Earth, wood, fire, metal, and water, with which the five organs, the stomach, liver, heart, lungs, and kidneys are supposed to have a mysterious sympathy. The specific cause of each disease was found either in a particular external agent, in one of the six tempers, seven passions, etc., or in supernatural influence. Therapeutic measures, excluding charms, prayers, and penances, consisted of acupuncture in one of the 657 "apertures" which are believed to communicate with the seats of morbid obstruction or overflow in the complex channels of the vital spirits; moxas applied under the same anatomical guidance; drugs, the true action of which was quite unknown, administered

55

usually in marvellously complex formulæ; dieting regulated on principles as fanciful as those of their pathology; plasters; shampooing; and baths of various kinds. The false reasoning upon which these remedies were administered rendered the practice far less useful and more perilous than any ordinary form of simple empiricism. A certain number of medical practitioners professed to follow the "Western system," and some of these had received an imperfect education from the Dutch, but a very few only could claim the credit of any knowledge beyond the European names, and an empirical notion of the action of the principal foreign medicines.

A second difficulty, a very grave one, is the popular prejudice against post-mortem examinations. This is at present almost insurmountable, and will probably retard for many years the development of native medical science.

In the last few years Schools of Medicine have been established under European direction, and a few chosen students are gaining an efficient education in England, France, and Germany. Medicine is now only a sapling transplanted into a foreign soil—it is as yet healthy, but whether it shall in the future flourish or wither depends upon the industry and intelligence of the young cultivators in whose charge it will soon be placed. There is at present good reason to hope that in a few years Japan will be able to add its quota to the medical progress of the world.

A description of the diseases of a country so little known to Europeans as Japan would be of small service unless accompanied by some account of the peculiarities of climate and of the physical conformation, habits, food, etc., of the people, which necessarily influence largely the prevalence of morbid processes. A brief notice of these is therefore prefixed to the analysis of the "Diseases of the Chest." With regard to the latter section, indulgence must be asked for the unavoidable lack of statistical details, and for the incompleteness of information on many points. It is hoped that this defect can be remedied in future reports.

For the meteorological details I am indebted to tables published by Dr. Hepburn, of Yokohama, Mr. J. Hochstetter Godfrey, of the Mining Department of the Japanese Government, Mr. H. B. Joyner, of the Imperial Meteorological Observatory in Yedo, and by various observers in Nagasaki, Hakodate, and Niigata.

SECTION I.

In climate, vegetation, and diseases, Japan may be considered on the border-land between the temperate and tropical zones. The tropical element is represented by heavy rainfall and high temperature during the summer months, by the natural growth of bamboos, palms and other botanical products which require artificial cultivation in our country, and by the prevalence of Kak'ke or Beriberi, a disease hitherto little known except in India, Ceylon, and the south of Brazil. A cold winter, with snowfall, an abundance of coniferous trees, and a liability to pulmonary complaints and certain forms of rheumatism, on the other hand, associate Japan with colder and temperate lands.

The geographical position of Japan is well known, and need not be here referred to.

The climate of different parts of the country varies, within certain limits, with latitude, and is also modified considerably along certain lines of coast by a warm ocean current, the "Kuro-shiwo," which runs from the Equator in a northerly and easterly direction, and passes along the whole East Coast of Japan, rendering the climate of the parts in its course much milder than corresponding latitudes on the western side of the islands.

The S.W. and N.E. monsoons which reign in the China Sea from June to September, and October to May respectively, affect Japan during the same periods, but are here much more irregular. The greater part of the rainfall is carried by the S.E. winds, which become saturated with aqueous vapour in passing over the Pacific Ocean.

The annual rainfall in and around Yedo and Yokohama is ordinarily about 60 inches, but occasionally is much greater. In 1868, the total, according to tables published by Dr. Hepburn, reached 122·6 inches. The so-called rainy season is supposed to begin in June, and to last for about six weeks; but meteorological observations show considerable variation in the period of greatest rainfall in different years. Heavy rains, lasting without intermission for twelve to thirty-six hours, may, however, be expected during the prevalence of the S. W. monsoon, while from the beginning or middle of October to the end of May the monthly fall usually ranges from 2 to 5 inches, the sky, in the intervals of the rain, being nearly always clear. The smallest rainfall is in December, January, and February; in April and May the weather is very uncertain, but, on the whole, is fine and pleasant.

The average annual number of rain-days in Yedo is about 98.

The snow-fall is usually light in Yokohama and Yedo, but in 1861 a depth of 20 inches was recorded on one occasion. In Niigata, on the West Coast and in Hakodate the fall is heavy. Typhoons usually occur once or twice in the year, and mostly come from the S.W.

Thunder and lightning are not common. Mists are rare in Yedo.

Earthquakes are frequent, but during the past twenty-three years have not been severe. In 1854 a great portion of Yedo was destroyed by an earthquake and by the terrible conflagration resulting from the fall of wooden houses upon the domestic lights and fires.

The mean annual temperature of Yedo from 1863 to 1875 was registered as between 58° and 59°, but in 1876 the more perfect records at the Imperial Meteorological Observatory by Mr. H. B. Joyner showed a mean of 56·3°, and it is probable that had the same advantages for estimation previously existed, the isothermal line of Yedo would be found between 56° and 57° instead of 2° higher.

The lowest temperature is in January and February, but seldom descends below 25°; the greatest heat is in July and August, especially the latter month, when the thermometer rises to 90°, 95°, or even 100° in the shade. The monthly average for August is between 80° and 84°.

The relative humidity is greatest during June, July, August, and September, averaging about 80 per cent.; it is least from November to March (inclusive), when the average is about 70 per cent.

The barometer is highest in the cold, dry months, especially January and February; lowest when the opposite conditions prevail. According to the observations of Dr. Geerts in Nagasaki, the highest atmospheric pressure in each monsoon period is noticed to be when the monsoon is least disturbed: thus in summer it is lowest with N. and N.E. winds, in the winter with S.W. winds.

As a generalization we may say that the weather from the middle of June to the middle of September is very unpleasant; there are heavy falls of rain, high temperature, and a moist, almost saturated atmosphere, often undisturbed for hours by a breeze. The effects of these unfavourable conditions are visible in man and beast. In man marked lassitude and debility, with great indisposition to bodily or mental exertion, loss of appetite, profuse perspirations, and a sensation of fulness or throbbing in the head are common symptoms. During the greater portion of the day the people for the most part try to escape the sun's rays by keeping indoors, and it is only in early morning or towards sunset that those whose occupations do not necessitate exposure during the midday can be tempted to use their unexercised but weary limbs. During this period kak'ke attacks large numbers of the overcrowded classes of the natives, and phthisical conditions previously concealed or stationary make rapid destructive progress. A perceptible improvement is usually noticed during the latter half of September. October is commonly a pleasant month, but occasionally there are heavy rains. From November to March inclusive the weather is exceptionally fine; the days are mostly warm and sunny, the sky clear and cloudless, and the air is dry and bracing; there are however sudden and great variations of temperature which appear to determine a proportion as great as in our own country of catarrhs, bronchitis, pleurisy, pneumonia, and sub-acute rheumatic affections. In the months of April and May the weather is changeable, but will compare very favourably with the corresponding period in England.

The soil of Yedo is alluvial, with a large proportion of clay; its absorptive power is not great, but the streets are rapidly dried after rain by the direct sun's rays. The city is situated in a great plain facing a bay on the south side of Japan. The adjacent land is cultivated for the growth of rice, and is hence marshy.

Meteorological observations have been made in Nagasaki and Hakodate during a period of several years, and recently in Niigata and Kobe.

The climate of Nagasaki resembles in most respects that of Yedo, but the annual mean temperature is a little higher (61°), the monthly average throughout the year being from 2° to 3° above the corresponding registrations in Yedo. The rainfall is heavier, and the number of rain-days is greater. Mists are common, especially in December. Snow occasionally falls in the winter, but is much less common than in Yedo.

Hakodate has a mean annual temperature of about 10° below that of Yedo (48·33°); the range in the direction of cold is much greater, the thermometer sometimes sinking in the winter nights as low as 2° Fahr. The maximum temperature is 88° in the shade. The annual rainfall averages 51·9 inches (period of observation nine years), the average number of rain-days being almost exactly the same as that of Yedo. Snow falls in considerable quantity. As a summer residence Hakodate is far preferable to Yedo or Nagasaki, as, although the days are sometimes sultry, the nights are generally cool.

Niigata during the year 1875 showed a mean temperature of 53·39°; the hottest months were August and September (av. 77·5°, max. 92·75°); the coldest months were January, February, and December (av. 36°, min. 20·75°); the number of rain, snow, and storm-days, 129. Snow-fall rather heavy during the winter months.

Kobe differs from the other parts of the coast of Japan in the smallness of the amount of rainfall, owing chiefly to the scarcity of large trees in the adjacent parts. Observations have however been, until very recently, too irregular and imperfect to allow quotation of any figures.

The Japanese people appear to consist of two, or, perhaps, three different races; the first, by far the most numerous, embracing the great mass of the inhabitants of the islands south of Yezo; the second the Ainos or natives of Yezo and the Kurile islands, and there is some reason to believe that the greater part of the nobility have a distinct origin.

The ordinary Japanese are characterised by certain peculiarities. The stature is nearly always small, in men commonly ranging from 5 ft. to 5 ft. 6 in.; in women from 4 ft. 9 in. to 5 ft. Men of 5 ft. 8 in. or even 6 ft. are occasionally seen, as in the case of the wrestlers, who are chosen on account of their bulk, but these are striking exceptions to the general rule. The coolies and fishermen are above the general average in height, but seldom exceed 5 ft. 6 in.; they are usually muscular and well-proportioned, and frequently display extraordinary powers of endurance; for example, two well-trained jinrikisha men * will draw a heavy foreigner 35 or 40 miles on a hot summer's day without showing signs of fatigue; their absolute physical strength, however, as tested by lifting weights, is greatly inferior to that of an English navigator. The lower official class and the shopkeepers are more often slender, narrow chested, and weakly.

The features are Mongolian in type. The nasal bones are usually markedly depressed and broad, the nose projecting much less than in Europeans; the nostrils are often, especially in the lower classes, directed somewhat forwards as well as downwards, and in these cases the face is particularly broad and flattened in aspect. The malar bones are large, and situated, together with the orbital margin, on a plane anterior to that found in the Caucasian type, hence in profile the eyes and cheek prominences approach very near to the anterior outline. The zygomatic arch is separated from the inner wall of the temporal fossa by an unusually wide interval.

The frontal sinuses and supra orbital arches are fairly well developed. The fissura palpebrarum is short and occasionally oblique, but the obliquity is seldom as well marked as in the Chinese; the upper eyelid is hidden by a characteristic fold of fat-containing integument, descending from the supra-orbital arches; the iris is a dull dark brown, the conjunctivæ in the Southerners often pigmented. The skin is usually sallow, but in young girls may be as fair as that of a European; the subcutaneous fat is in good proportion, and hides the muscular markings more than in Europeans, but obesity is rare at any age. The hair is almost invariably straight, black, and coarse, but in exceptional cases is slightly wavy; the eyebrows are fairly well defined, but not bushy; the upper lip and chin are thinly covered; the chest and legs may be slightly hairy, but are generally smooth.

The jaws are usually broad and massive, and generally show some degree of prognathism; the teeth are well formed, but the incisors and canines are large in proportion to the molars. The lips are often thick and widely separated, especially in the lower classes, but a well formed mouth is by no means exceptional. The chin is mostly more or less ill developed. The forehead is generally narrow and receding; the frontal eminences less developed than in Europeans; the antero-posterior diameter of the cranium is relatively short; the prominence

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* A Jinrikisha is a small two wheeled vehicle not unlike a wheelbarrow in plan; it is drawn by one or two men, if by two, one commonly takes the shafts in front, while the other pushes at the back.

of the occipital region less than in most European skulls; the sagittal region is not specially elevated. A want of symmetry between the two sides of the skull is very common, and is especially noticeable at the base.

The chest is mostly small, especially in its antero-posterior diameter. The sternum is more nearly vertical than in Europeans. The pectorals in the more active Japanese are well developed.

The limbs are generally well formed, and in the coolie class the calves of the legs attain a remarkable size. A bursa is commonly developed over the cuboid, in consequence of that portion of the foot resting upon the ground during the usual posture of repose. The foot is small and well shaped.

The women are very small, but there is nothing in their configuration requiring special notice. When young they are usually attractive, notwithstanding the unclassical outline of their features; the neck especially is nearly always beautifully modelled.

Menstruation seldom commences before the age of 15. From 16 to 18 is considered the usual marriageable age. Dystocia is said to be less common than in Europe, but there is no good evidence of this.

It is noticeable that the Japanese assume the appearance of senility at a comparatively early period; at 55 a man looks old and feeble, and at 60 is often decrepit. No reliable statistics of average duration of life are attainable, but the natives themselves say that even in the absence of special disease they do not expect to live much beyond 60; examples of great longevity are however recorded. Judging from ordinary observation, it may be fairly assumed that the full term of life for a Japanese is about 8 or 10 years below that of an Englishman. The women of the poorer classes manifest change most rapidly. In passing through the streets of any large town merry, childish, healthy-looking unmarried girls may be met at every step, but between these and the sallow, worn, apparently middle-aged married women, it would almost seem that no intermediate stage exists. Three years of marriage carries the girl of the lower and middle classes over fifteen years of her youth. The premature change is probably traceable partly to the hard drudgery imposed upon the wife by indolent husbands, and partly to the habit of suckling children up to the age of 3 or 4 years or more. The custom of blackening the teeth and removing the eyebrows after marriage is also answerable for some of the loss of beauty.

The old nobility usually have physiognomical characteristics differing so greatly from those of the rest of the Japanese as to warrant the belief that the origin of the two classes is quite distinct. The face is long and oval, the nose prominent and strongly aquiline, the profile sharp and decided, the eyes smaller and more oblique than in the ordinary people, the malar bones high, but not thrown forwards, and the general aspect and expression of the features is striking, and wholly distinct from the somewhat ignoble plebeian type. The upper eyelids are however concealed by a fold of integument, there is commonly more or less prognathism, and the height and general conformation offer no distinctive peculiarities.

The Ainos, or natives of Yezo, Saghalien, and the Kurile Islands are a wholly distinct race; they are somewhat taller and much broader and heavier than the natives of the main island; the neck is short, the cranium rounded, the nose broad and flattened, eyes not generally oblique, frontal sinuses well marked, skin bronzed from exposure and remarkably hairy; the hair is always black; on the scalp it forms thick pendent masses, but shows no tendency to curl; the eyebrows, moustache, and beard are very thick and full, the chest and limbs generally are closely covered. The disposition of the people is gentle, good-humoured, submissive, and peaceful. They are said to bear a close resemblance to the Finlanders and to the inhabitants of the parts of Russia adjacent to Yezo and Saghalien. They are probably the Aborigines of the country, and have been driven northward by a more energetic and intelligent people, the present Japanese, who, there is strong reason to believe, migrated originally from the Corea. There is no evidence to show that the two races have ever intermingled. The extreme rarity of even a moderate degree of hairiness of body, indicating a reversion to the Aino type, in the main and southern islands, contradicts the view recently published by Dr. Maget in the "Archives de la Medicine Navale," that the bulk of the present Japanese are the result of the commingling of aboriginal Ainos and an invading race whom he without sufficiently good grounds believes to have been Malays.

The ordinary residences of the Japanese are in one or two stories; the outer walls are constructed of boards or of a kind of plaster rather thinly spread over a rough lattice-work; the partitions dividing the house into rooms are slides made of a wooden lattice framework, either thickly papered on both sides or covered on one side only with a thin translucent paper which takes the place of glass. These slides run in grooves, and as they seldom fit accurately enough to exclude currents of air, the rooms are hence cold and draughty. The ceiling is as a rule low. The floor is covered with mats of 1½ to 2 inches in thickness; a fair outside is given to these from time to time by the renewal of the woven surface, but the baser substance is left unchanged for years, and forms a harbour of refuge for insect life of various kinds, besides conserving dust, materials of contagion, accidentally dropped organic matters, etc. As the boards forming the floor are concealed by the mats, they are laid down carelessly, and are separated by large gaps, which allow emanations from the damp earth lying 18 inches or 2 feet below to pass into and between the mats and to enter the rooms. At night the house is converted into a kind of box, almost hermetically sealed by outer slides of wood, from which all ventilation-apertures are omitted. In some of the larger houses an upper set of slides for day-ventilation, however, exists.

The people sleep upon a wadded quilt spread upon the mats; a similar quilt is used as a coverlet, and is generally drawn quite over the face. The wadding of the quilt is expected to do duty without purification for years.

The method of warming the rooms is a national evil of no small proportions. Stoves and fireplaces were until recently unknown, and are yet used only by a few of the more wealthy Japanese. The usual apparatus is a wooden box or metal brazier, nearly filled with wood ashes, upon which are placed a few pieces of burning charcoal; on cold days the inhabitants of the room crouch over this source of warmth, inhaling the fumes of carbonic acid and carbonic oxide as they arise. A modification of this is a large box, buried in the ground, and covered at a height of about 2 feet by a piece of quilt, supported by a framework. The Japanese sit near this in such a way as to expose the hands and lower part of the body directly to the heat, while the face receives the gases of combustion. The effect of habit, and perhaps a process of natural selection during past centuries, appears to prevent the poisoned air from causing any uncomfortable sensations or immediate ill results to those whose progenitors had been fortunate enough to escape elimination by such means; but Europeans, under similar circumstances, are in a short time seized by nausea, headache, and confusion of ideas, and are forced to seek warmth by other methods. It is very probable that the constant inhalation of a vitiated atmosphere during the winter months is one of the most powerful sources of the physical degeneration of the more sedentary Japanese. The coolie class apparently suffer least from the evil, because their occupations keep them in the open air during the day, and their hardy constitutions render them comparatively independent of artificial warmth, and better able to resist the deleterious effects of the charcoal fumes.

The clothing is loose and easy, but the throat, upper part of the chest, and legs are badly protected. The dress is cool and pleasant in the summer, but is possibly, in the more sedentary and less robust class, answerable for some of the catarrhs and pulmonary complaints prevalent in the winter months. The women have an advantage over their European sisters in the absence of stays, but their dress embraces the lower extremities so closely as to greatly impede free locomotion.

The feet are undistorted by boots, but free action of the muscles of the foot is prevented by the out-door use of clumsy wooden clogs, except in the case of the coolie, who trusts to the thickness of his epidermis, reinforced, if necessary, by straw sandals.

In point of cleanliness of attire there is much room for improvement in most of the middle and lower ranks. During the cold weather the same clothes are worn next the skin for months continuously, without undergoing anything of the nature of washing, and sometimes have to do both day and night duty until they become offensive to the nostrils of any too-sensitive bystander. Under such circumstances the frequency of phtheiriasis and scabies is not surprising.

Hats were, until recently, seldom worn, except on occasion, as a protection from sun and rain, and were commonly dispensed with under all circumstances by coolies.

The larger number of Government officials now adopt clothes cut after European models, and wear diversified but archaic head-coverings of foreign origin.

Paper umbrellas are carried as a protection against sun and rain.

Bathing is, perhaps more frequently performed in Japan than in any other country in the world. The poorest Japanese takes a warm bath once, or even twice every day, or at least three times in the week. This practice, however, does not entitle him to the reputation for cleanliness which has been conferred upon him by most European writers. The bath is taken not for purification, but as a luxury, and is unhesitatingly discontinued for weeks together, when any ailment renders the practice unpleasant to the patient or to his fellow-bathers. The water in the public baths serves, without change, for many customers, and any advantage which the skin may gain by the operation, under these circumstances, is quite counterbalanced by the concentration of cutaneous excreta afterwards applied to the body with the clothes, and by the very scanty attention paid to the hands and face between the baths.

The water of the bath is usually very hot, ranging from 110° to 125° Fahr. In old people fatal syncope is known to occur during immersion.

The bracing effects of a cold bath are never sought, except as a religious penance; the winter tubbing in cold water of some of the foreign residents is looked upon by the Japanese with astonishment altogether unmingled with envy.

The Japanese, like most Asiatics, are physically indolent. The coolies are forced to work hard, and the younger Sammai were formerly in the habit of practising athletic exercises; but a state of inactivity, or a lazy occupation, which permits the sitting posture and involves no great strain upon the bodily or mental powers, is the condition most natural to the ordinary specimen of the race. They are, however, remarkably industrious students.

The staple of food is rice, and this is grown in every part of the country where soil and situation will allow. Besides this, beans, wheat, barley, and peas are largely used in some districts, and one of these may entirely replace rice. Numerous vegetables are cultivated, but those most commonly eaten are the onion, the egg-plant, lily roots, young bamboos, and daikon (a kind of elongated turnip, which is pickled in brine, and supplies the place of condiments). The chief fruits are grapes, a large watery, almost tasteless pear, persimmons, melons, pomegranates, figs, oranges, plums, peaches, and loquots.

Fish of all kinds is eaten largely on the coast, both in the fresh and dried state; it is usually cooked, but one kind is taken raw. The octopus is a delicacy common at certain seasons. Oysters and other shell-fish are also plentiful.

Beef, mutton, pork, game and poultry are now used in Yedo, but the cost of these forms of animal food will probably always limit their consumption to the more wealthy few. In some of the mountainous districts of the interior, however, the flesh of wild quadrupeds and birds is habitually eaten, in addition to rice and other vegetable products, and it has been noticed that in these parts gout is not uncommon, although very rare among fish and rice eaters.

The essential elements of the meals of an ordinary Japanese in Yedo, Orsata, or Keyoto, are rice, fish, and pickled daikon. Many of the coolies live almost entirely upon rice, flavoured with daikon pickle which has become piquant and highly odoriferous by a species of decomposition; beans boiled in oil form an occasional treat, but are not an essential part of the diet. Upon this apparently meagre commons an endurance and vigour are maintained that would astonish the framers of physiological diet-tables. The amount of rice consumed daily by a coolie averages 2 pounds, this quantity yielding a very small proportion of salts and fats, and not more than 100 or 150 grains of nitrogen; the pickle gives some saline matters, but little or no nitrogen.

Eating is a rapid process; the bowl containing rice is held close to the lips, masses of the boiled grains are pushed into the mouth by means of chopsticks and swallowed without mastication. Fish and other articles of food are treated more leisurely, but imperfect mastication is the universal rule, and is unquestionably the source of the gastric affections which are probably more common in Japan than in any other country in the world.

The drink in general use is Saké, a spirit distilled from rice. Of this there are many varieties, most of which contain 15 to 17·5 per cent. of alcohol. It contains a proportion of fusel oil, which gives it, to unaccustomed palates, a peculiar and unpleasant flavour. A strong spirit, known as Arvornori Saké, containing 53 per cent. of alcohol, is drunk in Satsuma, Yedo, and elsewhere, usually diluted, but sometimes pure. Saké is mostly taken warm.

Saké produces a very rapid and unusually noisy but good-tempered intoxication, which speedily passes off, leaving stomachal disorder and nausea for two or three days as a memento of the excess. Subacute gastritis, often in a very troublesome form, is not an uncommon result.

The rapidity of the advent of intoxication and the irritant effects of the fluid upon the stomach prevent any but the most hardened bibber from taking large quantities habitually, and it is probably to this fact that the infrequency of delirium tremens and cirrhotic affections is to be attributed.

The proportion of total abstainers appears to be considerably greater than in Europe. The Japanese is content to relieve the occasional thirst of the day by a draught of water or a cup of tea instead of the glass of beer or other alcoholic beverage which plays so prominent a part in our requirements during the twenty-four hours. A visitor is invited to take tea; rarely, until lately, any form of alcohol. The Chaya, or tea-house, represents the Café of Paris, but the name in the former case really indicates the chief article of liquid refreshment sold. Two or three years ago, the use of bottled ale and porter, and of various wines began to creep in, and though these were at first genuine, if not always of the highest quality, unscrupulous native traders, relying upon the inexperience of their countrymen, soon began to affix forged labels to bottles containing fluids too horrible for description, and to sell them unblushingly as products of European malt or grapes. Tea is taken as a pure infusion, without milk or sugar.

Tobacco is smoked by both sexes, but the commencement of the practice is generally strictly forbidden by parental authority (which is far more respected in Japan than in most parts of Europe), until the age of eighteen or twenty is reached. The herb is placed in a pipe having a bowl of about one-fifth the capacity of an ordinary thimble. After half-a-dozen whiffs, the smoke being swallowed, the pipe is extinguished, and placed in a little case ready for the next occasion, which may probably occur in three or four minutes. An ordinary smoker does not consume more than half a pound of tobacco in a month, but confirmed smokers will get through double or treble this quantity. No ill results from its use are known.

The drinking water is all taken from wells, and in the low crowded districts is of very doubtful purity. No attempt is made to render it more potable by filtration or other means. In some cases the spread of typhoid fever has been traced to the use of certain wells.

Public hygiene is in a very unsatisfactory state, but fortunately an improvement is now commencing. Drainage is effected by means of gutters, open or imperfectly closed, running immediately in front of the houses, and finally opening into larger canals or into the river; the gutters frequently become obstructed, and the air is poisoned by miasmata from the accumulations of decomposing organic matter; and percolation into the soil beneath the houses constantly goes on; much organic matter probably finding its way into the wells.

Water closets form a part of the house, the ejecta fall upon the ground, and remain until carried away for agricultural purposes by coolies. Houses even of the better class have no superior arrangements, and from time to time the air in the dwelling rooms is rendered offensive by admixture with excrementitious odours. The fæces are removed in imperfectly covered pails, and are carried through the public roads to the rice fields without exciting any complaint from the passers by, who have become too much accustomed to atmospheric pollution to pay any great attention to it. In some parts of the country excrements are hoarded in large tubs kept just outside the houses, and are guarded carefully as so many crops 'in posse'.

The mud, which is always present in large quantities after rain, is allowed to remain until dried by the sun and converted into dust; this in its turn is allowed to be blown about in blinding clouds until reconverted into mud by a shower. A fall of snow, in the various stages and combinations which it passes through, commonly renders outdoor traffic difficult and unpleasant for eight or ten days. The present government is, however, making good hard roads, and there is little doubt the mud carts and water carts will soon follow.

A custom which indirectly affects the investigation of disease may be here alluded to—the right of adoption. The number of families in Japan which profess to trace their descent through two or three centuries or more is very large, considering the apparent absence of progressive increase of the population since the country was described by Kœmpfer; but it is easily explained by the fact that, whenever extinction of a house is threatened, the name and inheritance may be continued by the adoption of the child of a relative or friend, who is thenceforth as fully and undeniably a member of his new family as though he were really entitled by birth to the position. This practice is so common as to render it almost impossible to trace hereditary influences in the causation of disease.

Concubinage is often alluded to as a custom of Japan, but only the few are sufficiently wealthy to indulge in such additions to the household expenses. The ordinary adult Japanese has a wife only, and although the laws of his country allow him to divorce her by a simple act of will, the privilege is more seldom taken advantage of than might be expected. Setting aside the deference and obedience which a wife is supposed to owe to her husband (a claim not invariably liquidated), matrimonial relationship in this country does not differ very greatly from that in our own, amongst the great mass of the commonality.

A system of prostitution exists in most parts of Japan, but in certain provinces was strictly forbidden, and unfortunately substituted by a greater evil. Notwithstanding the absence of efficient preventive or curative measures, syphilitic affections do not appear to be more common or intractable than in our own country. A kind of "Contagious Diseases Act" has now been instituted, but it is very doubtful whether its provisions can be properly carried out owing to the great scarcity of educated surgeons.

Section II.

Diseases of the Circulatory System.—Pericarditis and Endocarditis are seldom met with in Japan, owing undoubtedly to the extreme rarity of rheumatic fever, and the entire absence of scarlet fever; chronic renal disease is also comparatively seldom met with in Yedo. The serous membranes are, however, occasionally affected in connection with small-pox, measles, and typhoid fever.

Valvular Diseases of the Heart are far less frequent than in Europe. It has been observed by Surgeon-General Gordon that affections of the heart and great vessels are unfrequent among rice-eating people in general, and the evidence brought forward by Dr. Jamieson, with respect to the Chinese, and my own wide experience in Yedo strongly confirm this statement. In this country the comparative immunity is attributable to the rarity of the most common exciting causes of endocarditis, the rheumatic, and the scarlatinous poisons. In Kagoshima, renal disease is comparatively frequent, and perhaps accounts for the larger proportion of cardiac affections in that place.

Although true valvular disease is exceptional, in most parts of the country temporary murmurs are extraordinarily common. These are most frequently associated with kak'ke (beriberi), but may be found in various conditions of anæmia and debility, and sometimes without any apparent cause. They are generally attended with more or less palpitation or irregular cardiac action, and with dyspnœa and giddiness on exertion. The abnormal sounds frequently simulate so exactly those dependent upon mitral regurgitation and aortic obstruction, that diagnosis is almost impossible until the removability of the bruit has been tested by a long course of tonic treatment; hence many physicians have supposed heart disease to be extremely common in Japan. During the year 1875, the number of patients admitted into the Chief Japanese Naval Hospital, was 976, and these represented nearly the whole of the important cases of disease occurring in the naval force (4,000 men). Over eighty of the patients had at the time of admission cardiac murmurs, but in all but four instances these disappeared under treatment. Of the four in which organic disease might be assumed to exist, two had aortic obstruction, one, mitral regurgitation, and one, mitral obstruction, with a distinct presystolic murmur, the latter case ended fatally. In the same year one case of endocarditis was treated, and one of pericarditis associated with cerebritis. In none of the cases could an exciting cause be discovered except in that of mitral regurgitation, the symptoms of which commenced suddenly and severely during strong exertion in a previously healthy man, and were probably due to rupture of some of the chordæ tendineæ.

Fatty Degeneration of the Heart is probably common after the age of fifty, but there is no positive evidence beyond the frequency of such symptoms as shortness of breath, feeble circulation, incapacity for exertion, and tendency to syncope.

Hydrops Pericardii occurs as a complication of kak'ke, but is rarely so extensive as to produce bulging of intercostal spaces or decided enlargement of the area of cardiac dulness. The cardiac symptoms in serious cases of the disease are probably independent of the local effusion into the serous sac, as this is seldom sufficiently great to account for the circulatory disturbance, and moreover, in the cases in which the fluid has been removed by paracentesis during life, no relief has followed.

External Aneurism is well known to the Japanese as a "blood tumour," and was considered beyond the influence of treatment ; it is, however, not at all frequent. No case has occurred in the Japanese navy during the last four years (until four years since no registration of disease was in existence). One example only in a Japanese has come under my observation—a large axillary aneurism in a coolie of forty years of age. Ligature of the artery was rendered impossible by the great upward displacement of the clavicle, and the tumour was successfully treated by galvanism. Amongst the foreign residents aneurism is also rare, probably owing to the fact that very few have reached the age of forty. I have met with only one instance of the disease, a case of popliteal aneurism in a patient of forty-five years of age. The flexion treatment was tried without effect, and compression of the femoral for thirty hours produced only a temporary diminution in the force of the pulsation, but a cure was effected by ligature of the femoral with carbolized catgut. The details of this and the above-mentioned case are about to be published elsewhere.

Embolism is very seldom met with among the Japanese, in consequence of the infrequency of valvular disease of the heart. An extremely interesting example has, however, been seen in the case of a foreign resident. The details would be out of place here, but the prominent points, which are as follows, are worthy of note.

The patient, aged 35, an English naval officer, in good bodily health, and without signs of disease of the thoracic or abdominal viscera, had suffered for about eighteen months from severe paroxysmal headaches in the right temporal region, gradually augmenting in intensity and complicated for five or six months with impairment of memory. The symptoms were relieved completely by relaxation from mental occupation, and were aggravated by emotional excitement or intellectual overwork.

On the 25th of December, 1876, an attack of paralysis of the lower part of the left facial nerve occurred suddenly, attended by mental confusion, but without unconsciousness. On the 31st of December he was seized by left hemiplegia. Loss of power was at first incomplete, but became absolute within three hours; mind almost inert for several hours, when intelligence returned; sensation found to be unaffected. Dull pain in right temple, right hip and right shoulder complained of towards evening. On the night of the 1st of January death was imminent from mingled asthenia and asphyxia (paralysis of left intercostals and left half of diaphragm), but a rally took place. Until the 14th of January progress was uniformly good, power of paralyzed parts returned to a considerable extent, the pain in the head and extremities disappeared, the intellect and memory were perfectly restored, and the patient was cheerful and had acquired a good appetite. On the night of the 13th he is said to have slept well. On the morning of the 14th he awoke in a dangerous condition; mind dull and inactive, face and head flushed, left side again paralyzed, and in addition rigid; relaxation of sphincters followed, and in evening intense tetanus with hyperpyrexia, temperature rising before death to 108·8°. Face and head intensely congested until just before death, when sudden pallor occurred. Death on the morning of the 15th from failure of respiration.

The diagnosis made during life was softening of the right middle lobe of the cerebrum, probably connected with tumour, but possibly with plugging of the right middle cerebral artery; the latter was however considered less probable than the former on account of the absence of heart disease, and the existence of long-standing pain in the right side of the head before the occurrence of hemiplegia. The symptoms during the last twenty-four hours of life could only be explained by intense inflammatory hyperæmia of the brain and cord.

A *post-mortem* examination of the brain revealed the following conditions:—

Vessels of membranes somewhat overfilled. Cerebral substance firm, not specially hyperæmic. Vessels for the most part collapsed in such a manner as to suggest past over-distension. No capillary hæmorrhages. Grey matter of anterior portion of under surface of right middle lobe and the adjacent portion of the Island of Reil softened. Superficial layers separated easily from the deeper layers. Under the microscope nuclear proliferation was seen in the softened substance, and repair had evidently commenced. Basilar and right internal carotid arteries blocked. The plug in the basilar was of very old date, fully organised, and tunnelled by a small vessel. The tunica intima of the old vessel still distinct, forming a sinuous ring around the new vessel and intermediate organised material. The plug in the right internal carotid extended into the middle cerebral artery, and for a short distance into the mouth of the anterior cerebral. Under the microscope the obstructing material had the appearance of fibrine undergoing organisation.

An accumulation of red corpuscles was found, forming a sort of plug in the left anterior cerebral artery; this appeared to have occurred shortly before death.

The cerebellum and medulla oblongata were apparently normal.

The points of interest in the case are the occurrence of two embolisms at different periods independently of evidence of valvular disease of the heart; the absence of any marked immediate symptoms at the time of the first embolism; and the sudden development, without apparent cause, of cerebral (and perhaps spinal) hyperæmia, with its curious results, tetanus and hyperpyrexia. The limitation of the headache to one side before the occurrence of the second embolism was not explained by the autopsy.

Parasitic Disease of the Heart.—No case of parasitic disease of the heart in the human subject has been yet reported, but it is by no means improbable that the condition occasionally exists. One of the cœlelmintha is known to be very destructive to dogs and some other animals, causing sudden death, preceded or not by premonitory symptoms of indisposition to exertion and occasional syncopic attacks. On examination of the body the right ventricle is usually found to contain a mass of whitish semi-transparent worms, ranging from one to four inches in length, and having a diameter of half a line to a line; some of these are rolled up into a kind of ball, others extend into the auricle and into the pulmonary arteries, and sometimes embolic masses of considerable size are found in the lungs.

The parasites are supposed to gain entrance to the body in an embryonic state by means of impure water, and to penetrate into the vessels of the stomach and intestine, ultimately reaching the right ventricle, and there remaining until accidentally carried into the pulmonary arteries. No complete investigation into the subject has however yet been made.

These worms have been found in the dog and weasel, and probably attack many other animals who are in the habit of drinking water from ditches, rice fields, and other doubtful sources. Cases of sudden or extremely rapid death in previously healthy men are not uncommon in this country, and if *post-mortem* examinations could be obtained under such circumstances, it might be discovered that we share to some extent in the danger arising from this terrible scourge to the canine race.

Diseases of the Respiratory Organs.—Diphtheria and croup are of frequent occurrence, but present no peculiarities. Tracheotomy has been successful in some cases of croup, but Japanese parents will seldom permit the operation to be performed. Whooping cough occurs in epidemics. It is of a very obstinate type, commonly resisting all treatment for three or four months. Its persistence is perhaps explained by the cold and draughty houses in which the patients live. The disease is known to the Japanese as the "Hundred-day Cough." Children appear, however, to get well without any impairment of health in nearly all cases in which they are not confined to the house.

Catarrhs are very common, and usually have a much longer duration than in England, perhaps owing to the great difficulty of escaping from draughts.

Bronchitis is one of the most frequent diseases during the winter months. It does not often, however, attack the Japanese in a very acute form. Under favourable hygienic circumstances the affection soon yields to treatment, but unfortunately few patients can escape from the terrible disadvantages of the native residences. More will be said in connection with this under the heading of phthisis. Chronic bronchitis and bronchiectasis are found in older people with about as much frequency as in Europe.

Pneumonia is very common, both as a primary and as a secondary disease. A small proportion only of the cases present the typical characters, the majority are distinguished by the absence of rusty-coloured sputum, and by the long persistence of the stage of consolidation. The consolidation is apt to continue, even under favourable circumstances, for many weeks, or even months, and finally subsides gradually without showing signs of the third stage.

A curiously insidious form is sometimes met with in the course of other diseases. The temperature, previously normal or slightly elevated, rises to 102° or 103° at night, and remits about 1° or 2° in the morning; but there is no cough, difficulty of breathing, prostration, or other symptom indicating a pulmonary complication; yet, on examination of the chest, the whole of one lung is found to have undergone more or less complete consolidation. The condition is usually relieved by treatment, but is very tedious. Its development does not appear to be connected with any particular constitutional state.

Broncho-pneumonia is somewhat frequent, and has a strong tendency to merge into a condition of phthisis. The physical signs usually disappear, though at a late period, from the lower part of the lungs; but one or both apices undergo a kind of catarrhal pneumonia, terminating in excavation Three such cases have been admitted into the naval hospital during the past year.

Pleurisy occurs in the navy with about the same frequency as pneumonia. As a primary disease it is nearly always unilateral; when secondary to typhoid or other fever poison it is commonly double. As in the case of pneumonia, its type differs from that obtaining in England. Pain during the first stage is seldom severe, although the febrile disturbance is well marked; sometimes the pain is scarcely noticed by the patient, or is referred to the interval between the ribs and the crest of the ilium. Effusion is often extensive, but rarely causes bulging or much visible alteration in the appearance of the intercostal spaces, even when the dulness extends over the whole pleural cavity. In many cases, too, the circumference of the affected side is only slightly increased, the space for the fluid appearing to be formed at the expense of the lung, and causing little change in the chest wall. Pneumonia is not an uncommon complication, and may render diagnosis rather difficult.

The results of treatment are good. The aspirator has been used in the naval hospital in three cases in which respiration was very much embarrassed, but in other cases flying blisters are relied upon to hasten absorption.

Empyæma has occurred in only one case under my observation. The pus was removed by the aspirator, and the pleural cavity syringed out with a dilute permanganate of potash lotion. The effect was rapid and beneficial, and at the end of ten days the discharge had almost ceased, the patient had recovered appetite, the temperature was normal, and all signs promised a speedy and complete cure, when, owing to the careless exposure of the almost unclothed body of the patient for about ten minutes after a bath, an attack of pleuropneumonia in the affected side appeared, the pleura was again filled with pus, and evidence of the commencement of phthisical destruction of the lung appeared at the end of about three weeks, the patient lingered for nine months, and died from exhaustion.

Hydrothorax may occur in connection with kak'ke, but is much less common than hydropericardium or œdema of the lungs.

Œdema of the lungs is one of the worst results of kak'ke. Two deaths from this cause occurred in 1876, and it is possible that the condition would be found to a greater or less extent in many cases could *post-mortem* examinations be obtained. The symptoms in the better marked of the two cases were as follows:—Intense anxiety, cyanosis, very rapid and laboured respiration, frequently repeated ejection from the mouth of a frothy blood-stained fluid by an action not unlike that of vomiting, small frequent pulse, gradually decreasing temperature, and extreme restlessness. A distressing pain at the epigastrium, possibly from over-action of the diaphragm, appeared two or three hours after the commencement of the symptoms, and continued almost to the last. Physical examination was difficult on account of the restlessness of the patient, but a fine crepitation, not unlike that of the first stage of pneumonia, was heard over the whole thorax, especially in front, and the resonance was somewhat diminished though not dull; the area of cardiac dulness was not notably increased. Death occurred five hours after the commencement of the anxiety and restlessness; the temperature just before the end was registered at 87° in the axilla.

The chief points revealed by the *post-mortem* examination were as follows:—The bronchial tubes were gorged with frothy blood-stained fluid, similar to that expelled during life; the lung-substance was crepitant, but appeared to be infiltrated with fluid, especially posteriorly and inferiorly. The bronchial mucous membrane was injected, the pulmonary vessels filled with dark blood, but not apparently overloaded. The pericardium contained about 2 ounces of clear fluid and a flat dark coagulum lying upon the floor of the sac. The right side of the heart was distended with dark blood, in which, however, was a rather firm coagulum, the left side strongly contracted, and containing a partially decolourized clot.

The stomach and intestines were congested, and completely denuded of epithelium. The small intestines were occupied by a fluid fæcal matter, possibly an admixture of normal fæces with effused serum.

The liver, kidneys, and other organs were congested, but otherwise normal.

The brain and cord were healthy in appearance, and sections subsequently examined under the microscope showed no abnormality. The membranes were somewhat congested. Coagulated blood extravasation was found in the spinal canal between the dura mater and periosteum.

The symptoms of pulmonary œdema were somewhat complicated by the pericardial effusion, but there is little doubt that the condition of the lungs was the immediate cause of death.

Asthma is apparently less common than in Europe, but is well known. It is sometimes complicated by acute bronchitis, and death may in such cases occur within two or three days.

Emphysema exists in Japan, but it is impossible to ascertain its frequency.

Phthisis is one of the chief scourges of the country. It is found in all parts, from Nagasaki to Hakodate, and appears to develop under all circumstances of climate and season. It and kak'ke commonly prevail in the same localities, but in certain places (as Kagoshima in the south), where the latter is almost unknown, phthisis is often met with, although it is probably less frequent than in Yedo. The forms in which the disease shows itself to clinical observation are as follows:—

1. Catarrhal phthisis.
2. Mixed phthisis, tubercular deposit supervening upon catarrhal pneumonia.

3. Tubercular phthisis.
4. Phthisis due to mechanical irritation.
5. Syphilitic phthisis.

The lack of statistics prevents any accurate comparison between Japan and other countries in respect to the ratio of phthisis to other diseases or to population, but the opinion which I have formed, as a result of general observation, is that the frequency of the complaint here is nearly as great as in England. The Japanese Naval Hospital reports show a proportion of about 4·5 per 1,000 of the total force, and this differs but slightly from the ratio given in the naval returns (1874) for the home stations of Great Britain.

The causes for the prevalence of phthisis are probably numerous, but the chief is undoubtedly defective hygiene; next in importance are climate and locality of residence; after these, "longo intervallo," come food, hereditary tendencies, etc., etc. Defective hygiene may possibly be the main factor in the production of about two-thirds of the cases, and renders a fatal termination inevitable and rapid in almost all. The points to be especially dwelt upon are, firstly, overcrowding of small habitations; secondly, the absence of provision for proper ventilation, especially at night; thirdly, imperfect protection against cold and draughts; fourthly, the use of charcoal as a generator of warmth; fifthly, atmospheric impurity from bad drainage, and improper disposal of sewage. All of these defects, except the first, are removable to a very great extent if not entirely; but until well educated medical men are disseminated amongst the people, and can impress upon them individually the true laws of health, little or nothing to amend the present condition will be effected. Locality of residence is scarcely capable of much change, as the low and most accessible parts of every large town will always be the habitat of the commercial classes, but by efficient drainage and other means the evils of situation would be greatly lessened.

The climate in the most crowded part of Japan has a double drawback, rapid changes of temperature in winter, entailing innumerable catarrhs, and bronchitic attacks; and a sultry saturated atmosphere in summer, which is not only answerable for anæmia and generally lowered vitality, but possibly interferes with the evaporation from the pulmonary surface, and so hastens existing phthisical processes, and determines an outbreak of the disease where a predisposition is already established. On the whole, however, the climate must be considered as far less predisposing to phthisis than that of England.

The difficulty of tracing hereditary tendencies to disease in Japan has been already referred to. Investigation into family history in cases of phthisis is unsatisfactory, but, in so far as it is of value, is found to indicate that inheritance plays a very small part in the etiology of the affection.

Apparently the most frequent form of phthisis is the "catarrhal." The history usually indicates a bronchial catarrh developing in a man of average health; the catarrh, neglected or badly treated, persists; the patient begins to lose flesh and strength, and when he at length comes under medical observation, one or other apex (most commonly the left), is found to have a diminished power of expansion, a comparatively dull percussion note, and feeble or tubular respiratory sounds. Under favourable circumstances of diet, residence, etc., these signs disappear, and the rescued man returns to his occupation. In the Naval Hospital, which is well situated and well constructed, the results of treatment of such cases are very encouraging, nearly 60 per cent. having recovered during the years 1875 and 1876. Under certain conditions, however, the progress is different. The emaciation continues, the night temperature rises three or four degrees above the morning level, "crackling," pleuritic friction, and other indications of advancing disease appear; cavities form; and death occurs in a few months. The duration of the affection is, as a rule, decidedly shorter than in similar cases in England, and less likely to be interrupted by intervals of dormancy of the morbid processes. There is little doubt that the rapidity of the course is in great measure owing to certain difficulties in the way of treatment; in the summer these are chiefly climatic; in the winter, chiefly hygienic; and in several instances under my notice progress has been arrested during the summer months by residence in the more northerly parts of the country; and, again, in the Naval Hospital, the effects of good situation and good ventilation not uncommonly succeed in producing an improvement, even in very advanced cases, during the spring, autumn, and winter.

Foreign residents sometimes develop phthisis during their stay in Japan, but the climate cannot be considered to give any special predisposition to the disease; I am strongly of opinion on the contrary that Japan would offer a good prospect of arrest or even complete recovery in many cases of pulmonic affection where the process is not too advanced; but it would be necessary that the invalid should be able to choose the situation of his residence, and to obtain suitable change of air and scene during the three hot months, July, August, and September. An example is now under my observation of a patient whose right lung is the seat of large cavities, but who has retained good health in this country for a period of nine years, except on one occasion, four years since, when a severe attack of hæmoptysis, induced by over exertion, threatened life. At the present time there is no sign whatever of active disease.

Tubercular phthisis is far less frequent than the catarrhal form. It is assumed to exist when pulmonary symptoms supervene upon a condition of apparently causeless preexisting debility and emaciation.

In some cases laryngeal and intestinal ulceration appear as the disease advances.

Mixed phthisis is not uncommon, if we may consider it diagnosed in cases commencing as in the catarrhal form, but after a progress of from three to six months manifesting signs of disease in the previously unaffected lung, or of tubercular deposit in other parts. In the absence of post-mortem examinations, however, it is difficult to distribute the different cases under their proper headings.

Phthisis due to mechanical irritation is said to occur among miners and stone-masons.

Syphilitic phthisis is by some Japanese physicians considered frequent, but I have not yet met with any well marked case. There is little doubt that it is sometimes to be met with, but there is no good evidence that it is more common than in other countries. I am not aware that fibroid phthisis has been found as yet in Japan.

The "Lancet," Feb. 17, 1877, gives the following summary of a paper in the "Archives de Médecine Navale," by Dr. G. Maget, who has been long resident in the Japanese islands, and has travelled through a large part of them :—

"Collectively they present a surface nearly one-third larger than that of France, with a population of thirty-six millions. The vegetable productions are varied, abundant, and useful. The bamboo grows luxuriantly, rice is cultivated with the dwarf palm, the wax tree, and the cotton tree. The banana, the pomegranate, the orange, with the sugar-cane and the indigo plant, grow freely. The whole country is liable to monsoons; a cold monsoon from the north-east visiting it from October to February, its commencement being announced by deluges of rain and terrible tornadoes, and a hot monsoon blowing from the south-west, which lasts from May to August, also accompanied by copious rains. The great meridional length of the islands of Niphon and Yesso, which constitute the greater part of Japan, causes the climate and temperature to vary greatly in different parts, and M. Maget distinguishes six regions. The first is the most northern, and is named Saghalien, and is boreal; it is little known. The second is that of Yesso, also cold, and hitherto but slightly investigated. The third and fourth correspond to the northern and middle and southern parts of the Island of Niphon. The northern region of that island, comprised between the 42° and 37° N. lat., is comparable to the temperate climate of the north of England, though the extremes of heat and cold are much greater. The central region, in which Yokohama is situated, is similar to that of the south-west of France, but again with extremes of considerable variation. In the southern region the isothermic lines undergo a great declension, and the extremes are very wide. The fifth region, that of Sikok, in which is Nagasaki, resembles that of Provence in its northern and that of Sicily in its southern portions. The sixth climate is that of the islands making up the Southern Archipelago of the south of Japan, and is tropical in its character; it has not been studied. The typhoons occur at the end of April and commencement of September, and coincide with the equinoxes and the reversal of the monsoons. These terrific storms are stated by M. Maget to defy description. They are probably huge revolving discs of air, resembling those recently so interestingly exhibited *in petto* by Mr. Osborne Reynolds at the Royal Institution. Their diameter varies from sixty to four hundred and fifty miles, their rapidity of movement is prodigious, and the damage done by them immense. The only fortunate circumstance about them is that they are of short duration. M. Maget recommends Japan as an admirable place for those who are debilitated by a long sojourn on the coasts of Asia. The best parts are near Kolie and Hiogo, where the temperature is tolerably equable, the soil sandy, and good water abundant.

CHINA.

Report by R. A. Jamieson, M.A. (of Shanghai), Consulting Surgeon to the Imperial Maritime Customs.

Although primary chest affections (thoracic aneurisms excepted) are comparatively rare among foreigners in China, for reasons which I set forth at length in the first volume of these reports, secondary complications, arising in the course of the endemic fevers, are of frequent occurrence. For the same reasons—namely, the youth, generally speaking, of the residents, their freedom from the evils attendant on bad or insufficient food and overcrowding, and the ease with which they obtain medical attendance and nursing, either in private or in hospital, whether they are or are not able or willing to pay for them—such complications are in themselves seldom fatal. Quite recently a sailor, admitted to the General Hospital with typhoid fever of a severe type, was, when convalescing, attacked by acute pneumonia and pleurisy on the right side. He died after a few days, in great measure exhausted by frequent paroxysms of dyspnœa. On post-mortem examination, the lower third of the ileum was found studded with cicatrised ulcers, only one patch, immediately above the valve, showing signs of present mischief. The cavity of the right pleura was obliterated by recent lymph, there not being more than half an ounce of serum present. The entire right lung was gorged with liquefied exudation, minute nodules of varying consistency, and here and there small abscesses communicating with the tubes being disseminated through its substance. This is the only instance of secondary lung disease that I can recall as in itself the cause of death. I have not seen phthisis developed during or soon after the occurrence of malarial fever, 16 instances of which presented themselves among the 672 cases upon which Flint has based his late work on "Phthisis;" nor have I seen the cold stage of intermittent marked by hæmoptysis, although I have once or twice expected it, so large and sudden is occasionally the serous exudation into the tubes.

In remittent fever of typhoid character we very frequently encounter pneumonia, usually limited to the right base, and in itself hardly sufficient to cause uneasiness. The symptoms disappear as the fever falls, and in many instances the stage of engorgement is not passed. The earliest symptoms, such as chill, rise of temperature, and slight delirium are liable to be overlooked, or rather ascribed to the primary disease, so that attention is first drawn to the lung by the occurrence of cough, with rusty sputa.

In the general visceral engorgement which attends the malarial fevers, the liver is frequently so much enlarged upwards as to give rise to the physical signs of right pleurisy with effusion; and in many of these cases there is, no doubt, a subacute pleuritis, limited probably to the upper surface of the diaphragm, and corresponding to the subacute peritonitis, limited to the lower surface of the same structure, which is of constant if not invariable occurrence. The stabbing pain, which occasionally replaces or is added to the deep-seated and continuous uneasiness of hepatic congestion, may be ascribed to these comparatively trivial inflammations of serous membranes, but it often leads to suspicion of suppuration in the liver. Of course, when suppuration does actually occur, all these symptoms are much intensified. Here the question is one of diagnosis, but among the multiform expressions of the malarial cachexia which come before practitioners in this climate, I have chanced to meet two instances of bronchitis with periodic attacks of dyspnœa occurring in men, one of whom found his chest-affection alternating with neuralgia or dysentery, while the other was free from bronchitis only during attacks of remittent or intermittent fever. In both instances quinine, in large doses, effected a cure, at least for the time.

Passing now to the influence of malarial fevers on the heart, there is, I think, no evidence to warrant the supposition that any organic mischief necessarily follows, even the completest impregnation of the system with the malarial poison—whatever that may be. In all severe cases of remittent fever, whether benign or of the typhoid form, but much more markedly in the latter, a tolerably superficial bruit is heard over the cardiac region, generally systolic in point of time, but one hears it also faintly in diastole, mitral in point of place, but it is heard faintly all over the heart. Its character is difficult to describe, but it is never musical. It is not creaking or rustling, but it has something of both. It is somewhat like the faint sound produced by drawing a soft brush lightly over a head of hair at right angles to the axis of the hairs. At all events, once heard it is easily recognised again. It suggests irregularity in the muscular contractions, and is ascribed by some to a myo-carditis. But this can hardly be, as the bruit disappears, leaving no trace behind it, as soon as the fever is conquered. On the other hand the rapid and profound alterations in the character of the blood as regards the number and size of the red corpuscles, and the presence of pigment, recently noted by Kelsch in cases of malarial intoxication, are sufficient to account for hæmic murmurs of any degree of intensity, and purely hæmic I believe that this murmur is.

Out of Flint's 672 cases there was but one (*Phthisis*, p. 419, case 2), that pointed clearly to the communicability of tubercular consumption. Most of the authorities speak doubtfully on the question of contagion, Villemin alone expressing a decided opinion in the affirmative. The following case in my practice bears upon this matter. In February, 1876, a lady, aged twenty-six, with a family history of phthisis, but who had previously presented no lung symptoms, took severe cold at a public ball. She had been nearly four years in China, and had suffered occasionally from mild attacks of intermittent fever, otherwise her health had been good. Acute catarrhal pneumonia was the result of the cold, and this was swiftly followed by deposit, and rapid excavation of both apices with persistent high temperature and night sweats. She had absolutely no hæmoptysis. However, her life was brought to an end with a celerity that defied all attempts at treatment. She died in fourteen weeks. She had been married, in 1872, to a man aged twenty-five, who was then in robust health, and who, to all appearance, continued to enjoy perfect health up to the date of her illness. His family history was excellent. His mother is still alive at an advanced age, and his father had died at about fifty, from the results of an accident which had overtaken him while perfectly well. He occupied the same bed with his wife through most of her illness, and nursed her sedulously. He left Shanghai to recruit his strength after her death, and on his return, in a few weeks, consulted me about a dry, hacking cough which prevented sleep. He complained of great weakness, night sweating, complete loss of appetite, and inability to lie on the right side. His complexion was waxy, his fauces pale, his chest emaciated. The right side expanded very imperfectly. Pulsation visible in supra-sternal notch. Breathing puerile over left front. Expiratory murmur greatly prolonged over the right front. At external end of right clavicle and downwards to the middle of the fourth rib, breathing harsh, noisy and tubular in expiration; pectoriloquy. It is only necessary to say that the case progressed rapidly; body-weight fell steadily, and hæmoptysis recurred frequently after the eighth week from the onset. The patient left for Europe some time ago, my last note, taken just seven months after he first consulted me, being as follows:—"Flattening of right side. Left apex dull, breathing there tubular. Cavity on right side well marked, with solidified margins, answering almost exactly to a space bounded by the clavicle and upper border of the fourth rib." This case impresses me forcibly as one of contagion, more forcibly, I dare say, than it will my readers, who, without seeing the man—a retired officer of a crack regiment—would find it difficult to realise how remote his appearance was a year ago from anything suggestive of phthisis.

During the year 1876, out of 295 admissions to the General Hospital (all foreigners), there were three cases of internal aneurism, locality not stated. Out of 28 cases of death among adult residents, two were due to aneurysm. Of one of these I have no particulars; the other happened in my practice. In it the dilatation occupied the arch, and the case was marked by intercurrent attacks of pneumonia of both sides indifferently, suggestive of intermittent pressure on the nerve trunks. The patient's voice was husky at all times, but during each attack of pneumonia it became almost inaudible. Unusual irritability of the fauces prevented a satisfactory examination with the laryngoscope. No post-mortem could be obtained.

One death was certified last year as due to diphtheria in an adult. Whether truly diphtheria or not, there was gangrenous ulceration of the soft palate, pillars, and tonsils. If it was diphtheria, it was the only case that has occurred in Shanghai at least for the last ten years.

The following case of tumour of the thyroid body may, perhaps, fitly find a place here. I communicated it to a late number of the *Customs' Medical Reports.*

A jinricksha driver, 38 years old, was admitted to the Gutzlaff Hospital on the 2nd March, 1876. He was feeble, but his general health seemed good. He suffered from a tumour about the size of a closed fist, which occupied the superior and inferior carotid triangles and the anterior portion of the subclavian triangle on the right side, and which he was anxious to have removed, as "it prevented his sleeping for more than a few minutes at a time, by threatening to choke him, especially if he happened to turn on his left side." It had been growing for several years without fluctuating in size, but it was only within the past two months that it had interfered with his sleeping. He had wasted greatly in consequence of want of rest. On examination the tumour was found to be very deeply seated; it could not be isolated from the sheath of the carotid vessels, appearing to be adherent to it or to have burrowed behind it. Posteriorly, it seemed to be in contact with the spine, but digital examination of the pharynx produced so much spasm that nothing could be discovered by exploring within the mouth. Its upper and anterior border was about three finger-breadths below the lower jaw. Inferiorly, it dipped behind the clavicle, but its lower border could be defined by drawing the entire mass upwards. Its internal edge was in contact with the trachea, which was healthy and not displaced. It did not share in the movements of the trachea except to a very limited extent. There was no difficulty in swallowing, and the act of deglutition communicated no motion to the tumour except what was due to the general movement of the neck structures. It was strictly limited to the right side. The sterno-mastoid was partially pressed backwards, but the bulk of the tumour lay under it. The right common carotid pulsated visibly, and the area of pulsation could be displaced by moving the tumour. There was no marked dilatation of the skin veins. On palpation the tumour was inelastic, giving, however, a sensation of deep fluctuation at its upper part. Its deeper portions seemed solid. Compression had no effect in diminishing its size. Neither pulsation nor bruit could be detected.

The patient was kept under observation for four days, with the result of confirming his statement as to his inability to sleep. In spite of the difficulties which surrounded the diagnosis, and at the patient's earnest solicitation, I operated on the 6th March. A long incision was made over the most prominent portion of the tumour, nearly parallel to, and a little to the inner side of the anterior edge of the sterno-mastoid. The layers of fascia and the platysma being divided on a director, the tumour was brought into view ; the anterior belly of the omo-hyoid stretched over its upper margin, and the sterno-thyroid, which was extremely thin, was displaced towards the left side. The fact of its being a tumour or hypertrophy of the right lobe of the thyroid body was now evident, and the question arose as to the removal of the entire gland. But it would have been impossible to effect this through the actual incision, while the very slight connection of the tumour with the trachea rendered it possible that the isthmus was either very narrow or perhaps altogether wanting. Deep exploration with the finger and handle of the scalpel separated the growth easily from the carotid sheath, from under which it had to be drawn ; and a like careful dissection separated it from the trachea between the points of ingress of the superior and inferior thyroid arteries. At this moment I unluckily wounded one of the superior veins, the bleeding from which was so violent that I was obliged to tie the vessel. Thereupon the tumour swelled enormously, resembling a mass of placenta as it lay turned out through the wound. The superior vessels were now, as far as practicable and as quickly as possible, isolated from the surrounding tissue, their fine fibrous investment, as well as the interlying connective tissue, being carefully respected. Around this pedicle, and as high up as possible, a stout silk ligature was thrown, and another was placed half-an-inch below. While these were drawn tight, a similar attempt at isolating the inferior vessels was made, but could not be so completely effected. Around the lower pedicle a whip-cord ligature was placed and drawn tight, while I removed the intermediate portion, leaving stumps of about half-an-inch above and about three-quarters below. The lower stump was then cautiously transfixed with a blunt director, and an elastic ligature drawn through, which was knotted on each side. One stitch was introduced to keep the edges of the skin in position.

The tumour, which involved the entire right lobe of the gland, weighed, when drained of blood, a few drachms over thirteen ounces. It was completely solid, containing no cyst. The hæmorrhage was severe, but would have been comparatively trivial but for the wounding of the vein.

The dressing consisted of a fold of lint wrung out of sweet oil, covered by another fold wrung out of a twenty-per-cent. solution of carbolic acid in oil, over which was placed a pad of oakum, and the entire was supported by a cravat of cotton cloth pinned in front. Half a grain of morphia was injected subcutaneously twice daily until the 10th, when the circulation becoming much stronger it was increased to three-quarters of a grain, and 30 drops of laudanum were given each night. The patient was an old opium smoker. The diet was milk and raw eggs. On the two days following the operation there was afternoon fever, which yielded to quinine. Appetite was good after the first day, and the patient slept well after the first night. On the 9th, suppuration being fully established, and the pus being extremely offensive, the wound was syringed out frequently with a five-per-cent. solution of carbolic acid in water. The upper part of the wound had united. The bowels having been confined since the operation, a dose of castor oil was given.

From this date until the 17th everything progressed most favourably. The ligatures separated on the 16th and the wound was apparently filled with granulations. The diet remained unchanged, and absolute rest, even to the use of a bed-pan, continued to be insisted upon. It was impossible, however, to keep the patient in bed. On the afternoon of the 19th, during the absence of the native assistant, he went into an adjoining room to a stool, where he appears to have passed a very constipated motion. Half-an-hour after he was left, the assistant returned, and found him lying across his bed, quite dead. As nearly as could be judged, there was about half-an-ounce of blood on the dressings. No post-mortem was allowed.

On two or three occasions it has happened to me to be consulted by men engaged in the turning of cast iron, suffering from severe catarrhal symptoms ascribed by them to the iron dust which they had inhaled. They complained of dull pain over the frontal sinuses, tickling in the nostrils and larynx, sneezing, coughing, etc., which may persist for four or five days, when tolerance seems to be established. This, however, is of short duration, for the symptoms reappear upon each subsequent exposure to the inhalation of cast iron in a state of minute division. Some years ago, on consulting Dr. Macartney, late of the 99th Regiment, who was then in charge of the Nanking Arsenal, and who had ample opportunity of studying the affection, I was fortunate enough to get from him an account of his personal experience, which I will give nearly in his own words. Shortly after exposure he found his nose discharging an astonishing quantity of a perfectly limpid fluid which soon became thick, white, and tenacious, but as profuse as before. At first the frontal pain was relieved by pressure, but soon pressure could no longer be borne, and the skin, from the bridge of the nose to the commencement of the lambdoidal suture, became exquisitely tender. Slight arterial hæmorrhage now occurred from the nose, the eyelids, and the skin of the forehead became puffy, and a tumour as hard as bone and about the size of a hemisphere of half-an-inch in diameter was found under the skin of the right eyelid and apparently attached to the edge of the orbit at or near the supra-orbital notch. This disappeared very slowly. Meanwhile the discharge from the nose was lessening in quantity, but was extremely viscid and stained with blood. During the night the nostrils became filled with accurate casts of the walls and of the inferior turbinated bones. The attack lasted about a month, and during this time there was almost constant toothache.

This was obviously a very severe case. I find that steam inhalations give greater relief than any other treatment, and are usually sufficient to abolish the acute symptoms within two or three days.

Dr. John Dudgeon (of Pekin), writing on "The Diseases of China, their Causes, Conditions, and Prevalence, Contrasted with those of Europe," says, "The Asiatic customs and social peculiarities, in my opinion, conduce to a higher vitality, and a greater freedom from acute and inflammatory affections. On that continent life is more quiet and easy; the Asiatic drinks less stimulating potations, eats simpler food, keeps better hours, marries earlier, takes more care of himself; his passions are more subdued, and his whole life and its actions more under the control of reason and religion."

After describing the climate, etc., etc., Dr. Dudgeon says, "*The warming of houses* is another point of importance. Chinese houses have no chimneys. In the north of China, where the winter is long and severe, the houses are provided with kangs, or earthen platforms, covered with large square bricks, having flues running under them, through which the heated air and smoke, if any (for they burn anthracite coal), passes, and after traversing the kang finds an exit in front into the room, and uniting with the heat of the fire, increases the heat of the room. Among the upper classes these bed platforms are sometimes heated from the outside, which is a decidedly preferable plan. The floors, too, are sometimes heated in this way, the flues being arranged under them in the same way, and heated from without. This union of kitchen, fireplace, and bed is a matter of great moment to the poor and the delicate, whether young or old, who suffer greatly from insufficient clothing and improperly or imperfectly heated houses. Among the very poor it dispenses with much bedclothing. The bedclothing of such consists generally of their every-day wearing apparel loosely laid over them at night, with the addition of a cotton mattress. They sleep with the head to the outside of the kang, the reason assigned being that in this position it avoids the danger of the clothes catching fire, and puts the head—the heavenly part of man—in a freer and more honourable position. With the head to the wall the impure air and feeling of restriction and confinement would prove injurious.

"We have at Pekin several beggars' houses or small inns and an Imperial House of Refuge so heated in the winter season. The latter is gratuitous, and a very small pittance, about a farthing for a night's lodging, is demanded by the keepers of the former. The windows are well papered and oiled. In the centre is a large fire-place for warming the room and the beggars, and supplying them with hot water. The beggars squat or lie down on the stove bed-places, with simply a mat stretched upon it, and they without any bed-clothes, in fact generally without any clothes at all. I have seen as many as fifty, each bolstering up his neighbour, on such a kang. The temperature is kept about 70°. The air of these rooms is, of course, extremely disgusting, but they are tolerably clean. During the day the beggars, who for the most part are fat and well-looking, pursue their profession in the streets of the city, and at night again return to their heated ovens. Although the atmosphere in these places is loathsome, it is still a matter of great consideration that they are able to obtain lodging in a warm room for the night when the thermometer is often near zero, especially when they have no blanket or coverlet to protect themselves. In some places a coverlet suspended from the roof is let down upon them at night. The mortality in the Imperial House of Refuge is very great. In the latter place the beggars are supplied with two meals of millet per day.

"From this description you will observe that the Chinese houses and bed-places, in the north, at least, closely resemble the Roman hypocaust, the rooms being warmed by pipes and smoke flues under them. A plan similar to this might very beneficially be introduced into our own country in one-storey houses, or the basement floors of others. In winter these kangs would prove eminently serviceable for the very young, and delicate of whatever age, among the poorest classes who cannot afford either sufficient clothing or bedding. They might be so arranged that our bituminous coal would prove no drawback, and I feel certain that our great mortality among certain classes from bronchitis, pneumonia, pleurisy, congestion of the lungs, etc., would be greatly lessened. The pawnshop, and afterwards the gin-shop, are too often the receptacles of the clothing charitably dispensed to the poor in winter. The frugal and economic Chinese, if placed in our position here, might even consider the propriety and feasibility of utilising the waste steam of our great factories for heating the dwellings of the neighbouring poor. The American cylinder stoves, now so universally used by foreigners in North China, are well adapted for heating purposes. They heat thoroughly, and are greatly to be preferred to the extravagant and poorly heating English fireplace. The water evaporating apparatus provides against headache, etc., from overdryness of the atmosphere. Chinese houses are on the whole well lighted, two sides being almost always composed of doors and windows. The light is well diffused, and there is no glare—oyster shells in the south, and Corean or other paper in the north, being the article with which the windows are glazed. Glass is being extensively introduced. An important factor in the health of the Chinese is their being so much in the open air. The male portion of the people, even those of our own profession, included along with the barbers and chiropodists, carry on their trades and callings in the public streets. They live much in the streets and in the open air—the whole side of their shops being freely exposed. In this way many of the evils and dangers of our crowded workshops, arising from impure air, from whatever cause, are avoided."

"The absence of renal and hepatic disease is referred in part to their comparatively temperate habits. With tropical heat in summer, the variableness of the weather, particularly in spring and autumn in most places, the poverty of the people, and their general exposure to the inclemencies of the seasons, it is remarkable to find hepatic disease so rare. Great care in preserving from chills, an object easily obtained, as we shall see, by the nature of the Chinese clothing, along with proper diet and temperate habits, are the chief prophylactic means against 'liver.' We find the Chinese, too, almost absolutely free from diseases of the heart and blood vessels — fatty degeneration, for example, which is the usual form of heart disease induced by alcohol. . . . Delirium tremens is also unknown in China."

"*Diseases of the Chest* are on the whole remarkably rare in China. We have already referred to their immunity from heart diseases. Other diseases of the chest, such as pleurisy, pneumonia, acute bronchitis, are hardly known, and phthisis is far from being so common as in this country.

"The author of 'The Middle Kingdom,' the oldest resident in China, remarks thus:—'Diseases of the viscera, of an acute inflammatory nature, are not so fatal or rapid, nor does consumption carry off so many as in the United States.' At Canton, in the South, Dr. Wang says, 'phthisis is tolerably prevalent, but by no means so common as in Europe and America.' Dr. Kerr, many years a missionary practitioner there, confirms this opinion. 'It is difficult,' Dr. Wang says, 'to say why it should be so, as the causes which produce consumption, such as bad air, insufficient food and exercise, bad hygiene, etc., must be much more operative, and must exist to a much greater extent here than in the more civilised countries of Europe and America.' One thing ought to be mentioned, he says, in connection with this question (if pneumonia and bronchitis have anything to do with the genesis of phthisis), that the Chinese here are not liable to acute affections of the chest. At an earlier period he writes that he saw only one case of acute bronchitis—the only case of acute affection of the lungs in three years. Idiopathic pleurisy and pneumonia he had never seen; and hæmoptysis in men and especially women is by no means such a sure sign and precursor of phthisis as it is in Europe. Chronic bronchitis is common, and so also, to a certain extent, is asthma. I can endorse most fully and heartily every word of this — it is an exact description of our pulmonary practice at the capital. Dr. Wang further adds, and I now quote his very words :—'The rarity of consumption among country people, and the greater exemption from it of the labouring class in the city, notwithstanding that they are badly housed, and badly fed, must be attributed to exercise and life in the open air, and I am inclined to think, that their food, though poor in quality, is not, as a rule, insufficient in quantity. Still I cannot quite understand why phthisis is not more prevalent than it is among them, especially the country poor, whose food often seems not more than sufficient to support life. Scrofula, another form of the disease'—and here I agree with him too—'is often seen in the hospital. The whole subject,' he adds, 'deserves investigation.'

"Chest affections at Shanghai are not generally severe, and the cases seen are mostly imported. In Formosa, phthisis is common, but of a very chronic nature. Acute disease of the respiratory organs is extremely rare at Amoy; pneumonia and severe bronchitis are almost unknown among resident Europeans there. Dr. Smith, at Hankow, reports :—'The natives spit blood with little or no provocation at all, and with but very little evil consequences; consumption is comparatively infrequent,' and he suggests 'that it may be owing to the great frequency of chronic bronchitis.' Dr. Reid, also of Hankow, is rather inclined to combat this view, when he considers the great prevalence around him, and in China generally, of the usually recognised causes of the disease. It is certainly staggering to one not thoroughly acquainted with the Chinese constitution, and even then, one is very apt to make one's practice almost unwittingly square with our theories and preconceived notions. After commenting on the various causes that exist predisposing and exciting to the disease, such as we have already enumerated, in the great want of sanitary science, he adds — 'if consumption did not follow as a consequence of all this, we should have a result different from what has been observed in other parts of the world, where the like predisposing conditions are found.' But unfortunately for his argument, we have it frequently in this country, where few, if any, of the causes enumerated at Hankow obtain. His causes, I may as well state, are these—that more than half the town population are debarred from exercise, and rarely, if ever, inhale fresh air; that the country people chiefly live on a vegetable diet, and often partake of it in insufficient quantity for the purpose of nutrition; that the subsoil in many places, and at certain seasons, is saturated with moisture; that the general health is deteriorated by the action of malaria, and lastly, on the strength of his colleague, Mr. Porter Smith, that hæmoptysis is acknowledged to be a common occurrence. He further adds—'supposing phthisis to be rare, its rarity cannot be ascribed to the absence of a special tubercular diathesis among the Chinese, since the researches of German pathologists have demonstrated that this disease, in the vast majority of cases, is, at its outset, a cheesy degeneration of inflammatory products, and that this may supervene on any inflammation of the lungs, although most frequently following chronic catarrhal pneumonia; and further, that tubercule is a secondary result, produced by the action of cheesy morbid products on the organism. This tendency to cell hyperplasia and cheesy degeneration is fostered by causes which deteriorate the health, whether acting from without or from within the body, and both classes are frequent enough in China.' It is no doubt frequent—Dr. Reid saw 118 cases out of over 5,200; but even on his own showing and enumeration of causes, I think Dr. Reid would agree with me, that it is after all not so prevalent as we should have expected, and certainly not so common as in this country where, as already remarked, the same causes are neither so numerous nor so severe. The Chinese hardly know what acute inflammation means, and all admit that even phthisis is very chronic. I have also seen many cases of hæmoptysis that have not been speedily followed by its ordinary consequences. No doubt such patients may, and do eventually succumb, but it is very chronic. Bronchial catarrh is exceedingly common everywhere in China, and of course particularly in the northern half of the country, and especially during the long and severe winter. This affection becoming chronic, which is the normal condition, simulates phthisis, and this may explain, perhaps, the frequency of this affection noted at Hankow; although we are told special care was exercised in each case to guard against a wrong diagnosis. Speaking of the naval forces in Chinese waters during and after the first opium war, Dr. Wilson says—'We had only one undoubted case of phthisis, and that in an officer whose case had clearly originated in England.' Bronchitis, he tells us, though not common, occurred more frequently, but was seldom met with as an original disease having much power and apart from common catarrh; and when it had given rise to pulmonary abscess, without doubt being confounded with phthisis. One thing, he says, is certain, that idiopathic affections of the lung are not common at Hong-Kong, and tubercular phthisis originating here has hitherto been all but unknown, if ever witnessed, at least in the naval force. This exemption, he adds, is in conformity with what has been noted in other miasmatous districts—where there is the prevalence of ague, consumption is not rife.

"Dr. Reid lays considerable stress upon the proved connection between phthisis and abundance of soil-moisture and drainage, and quotes one authority to prove that the death rate of phthisis, in certain English towns, depends upon the efficiency of the drainage, and Mr. Simon declares, that 'dampness of soil is an important cause of phthisis to the population living on the soil.' On this ground, if on no other, Hankow, and many other places in China, ought to be hot-beds of the disease. If, then, as Dr. Reid himself asks, the disease be rarely met with in China, will it show that certain elements now supposed to be powerful agents in rendering phthisis prevalent among a population, have been over-estimated as regards their evil influence on the body, or that some other conditions exist which modify or neutralise them?

"A certain antagonism has been supposed by some French surgeons in Algeria and some American writers, to exist between ague and phthisis. Where the one prevails the other is either absent or very rare; and certainly the observations made in China would seem to bear out this doctrine. Ague is very prevalent in the centre of China along the course of the great river Yangtse, which is, Nile-like, subject to periodical risings and overflowings. It is also very common in the south, probably the most frequently met with disease there. At Pekin, the soil being sandy and absorbent, and there being little damp or marshy ground, ague in ordinary years is one of the rarest affections. The heat there is extreme for six weeks in summer, and the rainfall is copious at that time. The streets of the city and parts of the surrounding country are frequently for days and weeks under water. During the great inundations of 1870 and following years in Chihli, ague rose to the first place in point of numbers. In Shanghai, from April, 1860, to July, 1861, 28,000 cases were seen; ten were for pulmonary consumption (seven were well marked), and 1,400 were for ague. Tubercle is common, but is confined entirely to the abdominal organs. My experience at the capital all points towards the same conclusion. In Formosa, one practitioner disputes the supposed antagonism, and notes 47 cases of phthisis in twelve months, and 718 cases of malarial disease. During the summer of 1872, he notes again 340 cases of intermittent fever, and 38 cases of chronic phthisis. At another part of the same island, during the same time, 20 cases of consumption were observed. It might, however, be a question, if malaria does not entirely neutralise it, does it not modify it? If so, this might account for the prevalence of the one, and comparative infrequency of the other. Or is this great immunity from consumption (for such we must all admit) where ague is rife, to be accounted for on other grounds, such, for example, as that of heat alone, predisposing, according to a well-known and fully-recognised division of diseases, to abdominal and thoracic, the former predominating in the southern and hot, and the latter in the northern and colder regions?

"*Anæmia* is the fruitful source of much of the disease in China, and has been by some considered the characteristic and important pathological feature of the Chinese constitution. This condition is caused, in addition to the reasons already advanced, by ague, deficient and improper food, dyspepsia, itself the effect as well as the cause sometimes of this condition, and by too long continued suckling of their children.

"*Diphtheria* existed as an epidemic at Pekin in 1866, and is more or less always present, and proves very fatal. I have known of twenty-four deaths in a family of twenty-six individuals within one month. I have not heard of it elsewhere in China. Our brethren at the ports all note its absence. Its origin goes back to 1821, and is attributed to the import of lucifer matches.

"*Cancrum oris*, or stomatitis is common, of course, in young, unhealthy, anæmic, pot-bellied, scrofulous-looking children.

"*Goitre* is very frequent in the north among both sexes. It is found also on the plains and in our large cities, and frequently in the absence of the supposed ordinary producing causes. They have for centuries been aware of the power exercised by seaweed over tumours of this and other classes.

"The Chinese are wonderfully free as a people from deformities, monstrosities, and such like. The Chinese never intermarry with one of their own name, and this may account for the absence of any diseases supposed to be dependent upon, or derivable from, consanguinity, and what is the salvation of any country is early marriage, which is universal in China, from the desire to have sons to hand down their names and worship at their tombs. The children are suckled at the breast for about three years. It is astonishing what a greatly increased amount of the milk secretion is obtained in China, even by European mothers, by the consumption of a regular daily quantity of well-made rice or millet gruel.

"As already stated, although the most sober of peoples, the Chinese drink no inconsiderable quantity of spirits; but excess is almost unknown. They form no exception, therefore, to the rule that all nations have practically repudiated the doctrine of water being the simple salutary beverage designed by nature. From a pretty large and extended experience in China, I can, however, confidently assert that the *aqueous* regime has guaranteed the best health and longest term of residence there among Europeans, and the more slowly we deviate, if at all, from this course the better. Tea will be found the most wholesome beverage, promoting health and happiness by doing away with noxious and intoxicating potions. So far, its introduction has been accompanied with the most salutary consequences, and it is believed that its extensive consumption will most effectually counteract drunkenness and promote health. The author of the 'Ride to Khiva' correctly puts it when he says, 'This beverage (tea) becomes an absolute necessity when riding across the Steppes in mid-winter, and is far superior in heat-giving properties to any wines and spirits. In fact, a traveller would succumb to the cold on the latter, when the former will save his life.' Tea has been the national beverage of a third of the population of the globe for the last 1,500 years. The use of boiling and boiled water, either alone or with a little tea in it, is characteristic of the people, and has been productive of much good and of the prevention of much disease. The astringency of the tea, like the use of betel nut in India, has been a corrective against dysentery and diarrhœa, and the boiling of the water has obviated typhoid fever, diarrhœa, calculus, and other diseases.

"We cannot lay too much stress on regularity in everything—hours of sleeping, eating, working, and exercise. With the Chinese there is the perfect appropriation of the sunlight in preference to artificial illumination. They rest, work, and sleep in periods that precisely accord with the periodicity of nature. They retire early to rest, opium smokers excepted. The streets of Chinese towns are deserted shortly after sunset. They rise early; the Emperor and his court at or shortly after midnight. The business of the empire for the day is all transacted long before we should think of getting up. Some of their fairs are held before, or just at, sunrise. The value of regular hours and of rest is little thought of here, and too little inculcated. The almost invariable answer given by aged persons as to the cause of their longevity is early hours and regular habits; and some one, merely looking at the subject in its commercial aspect, has made a calculation of the saving in gas and candles which such a course would bring about, and it is simply astounding. The Chinese are always struck with our activity in everything—we cannot even walk slowly; and although we have enough time and money, it may be, we must still be going a-head, rushing and bustling, little thinking that 'nourishing our heart,' as they call it, is any concern of ours. Above all things, the Chinese enjoin peace of mind and quietness of body—avoidance of anger, fear, grief, anxiety, and the violent exercise of the passions generally, to which are ascribed more than half their disease. The Westerns seem a riddle to them—they fail to understand us. We have carried industry and competition to an extreme. Our social exigencies override our philosophies. Competition in business, speculation, religious controversies, party politics, etc., undermine our health and increase our mortality returns. The Chinese do everything quietly and methodically, without the slightest exertion or fuss. They seldom do anything for themselves which can be done by another. They have few ups and downs in their world. Fate regulates everything, and so they are content with their lot. If they have wealth they use it; if none, they do without it. They live on in one unbroken routine. Worry is unknown. General indolence and ease, disinclination to be troubled about matters, a desire to let things take their course, trusting that all will come right, are their characteristics. This state of feeling, partly inculcated by their various religious systems, and occasioned partly by the climate, and in accordance with their unstimulating food and abstemious habits, conduce most effectively to the permanence of their institutions and indispose them for any change in their customs."—("Glasgow Med. Journ.," Vol. ix., 1877.)

⁂ For further information regarding China and its climate, diseases, etc., see Dr. Dobell's "Reports on the Progress of Medicine in different parts of the World," Vols. I. and II., 1869, 1870, and Vol. I. of these "Reports on Diseases of the Chest," (1875.)

BRITISH KAFFRARIA.

(*Report by* CHAS. EGAN, A.B.T.C.D., M.R.C.S., ETC., of King William's Town).

MR. EGAN gives the following report on the meteorology and diseases of the respiratory organs in King William's Town, British Kaffraria:—

"As South Africa has lately been much recommended as a health-resort for persons suffering from phthisis, it may perhaps be interesting to some of your readers to have presented to them a few statistics of the meteorology and diseases of this part of South Africa, as it is not very far from Bloemfontein, in the Orange River Free State, which is the place most recommended. Bloemfontein is, however, situated more in the interior and at greater elevation, being, as far as I can ascertain, nearly 5,000 feet above the sea. The temperature in summer is as high there as here, but the winters are colder and drier; but, so far as I know, no regular statistics of the meteorology of the Free State have as yet been kept; and I believe that no statistics, such as I now give, have been kept for any part of the frontier districts of the Cape Colony.

"The statistics I now bring forward are derived from registrations of the meteorology taken by myself during the six years 1870-75, both inclusive, and from the journal of my practice during the same period in the district of King William's Town; but my experience of the diseases of the country extends over a much larger period, as I have been in practice here since 1857.

"The meteorological observations have been taken by me at the Civil Hospital, King William's Town, which is situated close to the town, at an elevation of about 1,350 feet above the sea, and about thirty-five miles in a direct line from the sea-coast. The town contains over 3,000 inhabitants, exclusive of the garrison, which consists of about 600 men, besides the women and children belonging to the garrison.

"The statistics of disease are taken from the journal of my own practice, including both private cases and those attended by me as district surgeon; but does not include any cases among the native population. As there is only one other medical practitioner (in private practice) residing here, the statistics I give may be said to represent more than one-half of the disease occurring in the town and its immediate neighbourhood.

"King William's Town is the largest town in British Kaffraria (it is the fourth town in size in the Cape Colony), and is in latitude 32° 62′ S., and longitude 27° 23′ E. It is built on a plain gradually sloping towards a river called the Buffalo. The soil is sandy, with a gravel subsoil lying over beds of hard primitive rock. The country round is much more elevated, placing the town in a valley; the river runs in a low bed, and there are no marshes or undrained land in the neighbourhood. Indeed, in all this part of South Africa the country is rather too well drained, as all the rivers run in low beds with high banks, making irrigation a very difficult process; but we derive some benefit, as it is on this account that the country is altogether free from diseases of malarious origin. Since I came here, in 1852, I have never seen a case of intermittent fever originating in this country; I have only met with it in persons who contracted the disease elsewhere. The water-supply of the town is very good, being brought by an aqueduct, taken from the river two miles above the town, and distributed in iron pipes. In reviewing the diseases of any country, especially those of the respiratory organs, the nature of the climate is a most important consideration. I therefore will first bring forward some statistics on this subject. The observations have been taken daily, morning and evening; but as it would take up too much space to give the meteorology of each month separately, I have taken the average for the quarters of each year—the spring quarter including the months of September, October, and November; the summer, December, January, and February; the autumn, March, April, and May; and the winter, June, July, and August.

"Table I. gives the mean temperature of each quarter of the year for the years 1870 to 1875, both inclusive:—

TABLE I.

	Spring.	Summer.	Autumn.	Winter.	Mean for year.
1870	62·7°	70·2°	65·5°	54·3°	63·1°
1871	61·1	65·3	61·2	54·8	60·6
1872	66·3	68·0	61·3	50·8	61·3
1873	61·0	68·8	60·8	54·1	61·1
1874	59·3	62·3	56·3	49·8	57·0
1875	58·7	68·1	59·9	50·5	59·3
Mean of 6 years	61·5	67·2	60·8	52·3	60·1

"In considering the meteorological conditions of any country, with regard to its action on disease, especially in regard to those of the respiratory organs, besides the mean temperature, other important items must be taken notice of. First, the range of temperature in a given space of time—not the difference between the mean temperature of one quarter of the year and another, but the difference that occurs during the course of a day. In this respect the climate of this part of the country is at times rather trying to invalids.

" Table II. shows the highest and lowest reading of the thermometer in each quarter, taken in the shade :—

TABLE II.

	Spring.		Summer.		Autumn.		Winter.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1870 ...	92°	31°	96°	49°	98°	32°	88°	29°
1871 ...	94	38	99	44	98	28	88	32
1872 ...	95	31	101	42	90	37	85	27
1873 ...	99	32	99	42	96	30	86	29
1874 ...	93	32	98	44	86	27	83	24
1875 ...	90	27	101	42	96	30	80	28

" In order to render Table II. more complete, I add a table giving the greatest and least ranges of the thermometer occurring in the space of twenty-four hours, registered in each quarter, and also the mean range for the quarter, as deduced from the daily observations :—

TABLE III.

	Spring.			Summer.		
	Max.	Min.	Mean.	Max.	Min.	Mean.
1870	41°	5°	25°	37°	6°	18°
1871	39	5	23	48	4	21
1872	42	9	26	42	10	28
1873	50	9	22	37	9	27
1874	50	12	23	42	10	27
1875	47	10	27	49	14	28
Mean range of 6 years	...	...	24	...	...	24·8

	Autumn.			Winter.		
	Max.	Min.	Mean.	Max.	Min.	Mean.
1870	34°	7°	19°	37°	10°	27°
1871	40	10	23	40	6	24
1872	37	11	21	38	10	23
1873	42	10	27	46	13	24
1874	46	10	26	46	14	28
1875	36	16	26	44	16	24
Mean range of 6 years	...	...	23·6	...	...	25

"Although the heat in the middle of the day is at times very excessive, yet the nights are usually much cooler, the thermometer rarely registering over 70° through the whole night, even in the middle of summer. In winter there are many hot days, the thermometer rising over 80°, and falling to below freezing-point at night.

"The above table gives the range as taken in the shade; but the range taken between the highest point of the thermometer placed in the sun and the minimum at night is far greater, as is shown in the next table, giving the highest reading of the solar thermometer, and the range between it and the minimum of the succeeding night:—

TABLE IV.

	Spring.		Summer.		Autumn.		Winter.	
	Max.	Range.	Max.	Range.	Max.	Range.	Max.	Range.
1870 ...	128°	67°	124°	47°	134°	63°	122°	74°
1871 ...	129	79	124	57	134	80	122	80
1872 ...	124	84	128	67	133	82	127	86
1873 ...	128	83	131	67	136	90	126	90
1874 ...	132	92	132	69	132	93	121	90
1875 ...	128	83	134	74	133	82	122	86

"These excessive ranges of temperature, occurring rather suddenly, at times in the afternoon, are the commonest causes of disease in the respiratory organs, especially in the autumn and spring—in autumn from persons keeping on their light summer clothing; and in spring from putting off the winter clothing too soon on account of an unusually hot day occurring at that season.

"The second point to be considered with regard to causation of disease is the amount of moisture in the atmosphere. This is shown in Table V., which gives the mean dew-point temperature for each quarter, and also the average difference between this and the mean temperature. At times, when a hot north wind blows, this difference is very great; I have marked as much as 38° between the thermometer in the shade and the dew-point.

TABLE. V.

	Spring.		Summer.		Autumn.		Winter.	
	Dew-pt.	Dif.	Dew-pt.	Dif.	Dew-pt.	Dif.	Dew-pt.	Dif.
1870 ...	55·1°	7·6°	61·7°	8·5°	54·2°	9·3°	44·2°	10·1°
1871 ...	53·8	7·3	60·3	5·0	53·5	7·7	44·0	10·8
1872 ...	50·6	8·7	58·8	9·2	56·8	7·5	42·2	8·6
1873 ...	53·7	7·3	61·9	6·9	55·2	5·4	43·7	10·3
1874 ...	55·7	3·6	61·7	1·1	54·5	1·8	41·1	8·7
1875 ...	50·3	3·4	62·8	5·3	53·9	6·0	43·4	7·1
Mean...	...	6·2	...	6·0	...	6·2	...	9·2

"Table VI. gives the rainfall in inches and the number of days in each quarter on which rain fell:—

TABLE VI.

	Spring.		Summer.		Autumn.		Winter.	
	Rain. Inches.	Days. No.	Rain. Inches.	Days. No.	Rain. Inches.	Days. No.	Rain. Inches.	Days. No.
1870 ...	6·78	26	11·99	51	7·26	37	1·92	11
1871 ...	10·02	34	9·18	33	3·24	24	4·75	20
1872 ...	4·57	38	3·67	28	17·68	34	4·31	27
1873 ...	6·03	39	9·43	31	4·54	13	1·22	34
1874 ...	5·42	29	19·27	43	8·18	24	8·55	12
1875 ...	3·82	28	7·47	34	6·80	34	4·67	22

"The mean rainfall, taken from observations for the years 1868 to 1875, both inclusive, gives a mean average of 27·63 inches per annum; and the average number of days per annum on which rain fell is 115.

"The greatest rainfall occurs in the summer and autumn, though on an average there are more days on which rain falls in the spring months. This is on account of the heavy thunderstorms in the summer and autumn, when a greater quantity of rain falls in a shorter space of time than in the spring.

"The average rainfall for each quarter, and the average number of wet days, are—spring, 6·73 inches and 41 days; summer, 9·90 inches and 37 days; autumn, 7·23 inches and 26 days; and winter, 3·79 inches and 16 days. The average rainfall for the month of June is only 0·40 inches.

"The most prevalent wind during the summer months is the south-east. It is generally a pleasant fresh breeze, but at times sets in with heavy rains lasting three or four days. The north and north-east winds are hot and dry, and very disagreeable. They come on at all times of the year, and produce very high temperature, generally followed during summer, in the afternoon, by a pleasant south-easter, and in winter by frost at night. The north and north-west are most prevalent during winter, blowing often in strong gales from 9 a.m. till sunset. The south and south-west winds generally bring with them rain and damp cloudy weather.

"The last point to be brought forward in these meteorological notices, is the state of the barometer. This is shown by the following table, giving the maximum and minimum for each quarter:—

TABLE VII.

	Spring.		Summer.		Autumn.		Winter.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1870 ...	28·88°	28·14°	28·58°	28·10°	28·78°	28·09°	28·93°	28·08°
1871 ...	28·81	27·99	28·74	27·94	28·75	27·94	28·96	28·00
1872 ...	28·84	28·07	28·67	27·80	28·73	27·96	29·13	28·09
1873 ...	28·84	28·12	28·64	27·90	28·83	28·07	28·93	28·18
1874 ...	28·87	28·00	28·59	28·00	28·85	28·06	29·07	28·19
1875 ...	28·94	28·13	28·56	28·05	28·77	28·05	29·05	28·35

"From all the observations taken, the mean height of the barometer is 28·49°. The average height in winter is much greater than in summer. The prevalence of thunderstorms in the summer and autumn months makes this difference, as the mercury goes very low before and during a thunderstorm. These thunderstorms are very frequent during the summer, coming on in the afternoon. Here they generally come from the north-west, against a south-east wind, the wind suddenly changing as the storm commences.

* * * * *

"In examining the statistics of disease in this country, in reference to its fitness as a health-resort for phthisical patients, it is of most importance, first, to consider the diseases of the respiratory organs.

"The total number of cases of these diseases, attended in the six years, 1870 to 1875, and from which the following statistics are drawn, are 1837—divided as is shown in the following table:—

TABLE VIII.

	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Disease of respiratory passages	102	89	85	122	86	150	634
Bronchitis... ...	33	67	100	85	111	111	507
Pneumonia ...	21	5	20	32	23	31	132
Croup	1	5	3	4	8	26	47
Influenza	17	81	109	53	121	95	476
Phthisis	4	9	8	4	5	11	41
	178	256	325	300	354	424	1837

"Under the heading of diseases of the respiratory passages are included cases of common catarrh, relaxed throat, chronic and acute tonsillitis, cynanche pharyngea, and cynanche laryngea (with the exception of croup).

"Table IX. shows the number of these cases that occurred in each quarter of the year (the quarters being the same as given in the foregoing meteorological statistics), and the percentage for each quarter on the whole number of cases:—

TABLE IX.—*Respiratory Passages.*

	1870.	1871.	1872.	1873.	1874.	1875.	Percentage.
Spring	27	15	13	31	23	46	24·45
Summer... ...	16	15	19	24	28	30	20·80
Autumn... ...	30	30	25	45	21	32	28·70
Winter	29	29	28	22	14	42	26·86
	102	89	85	122	86	150 =	634

"This table shows that this class of disease is most common in the autumn months—viz., March, April and May—which is the season in which the most sudden changes of temperature take place, and when fogs at night are most common. At this time of the year the epidemic "house sickness" is prevalent, which is a form of acute bronchitis or suffocative catarrh.

"The number of deaths registered under this class (Table IX.) was only 2, giving a percentage on the total number of cases of 0·31. One of these fatal cases was of a very unusual character; death resulting from hæmorrhage, due to ulceration of an artery in the throat, with rapid sloughing of the right tonsil.

"The other death resulted from cynanche laryngea in a boy fourteen years of age, on whom I performed the operation of tracheotomy.

"The disease next in order to the above is bronchitis, of which 507 cases were attended during the six years. In this number, of course, there are included very mild as well as severe cases, and both acute and chronic.

"Table X. shows the distribution of these in the different quarters of the year, and the percentage for each quarter on the whole number:—

TABLE X.—*Bronchitis.*

	1870.	1871.	1872.	1873.	1874.	1875	Percentage.
Spring	10	28	34	19	21	36	29·20
Summer... ...	5	13	31	31	27	17	24·50
Autumn... ...	5	9	22	18	26	24	20·51
Winter	13	17	13	17	37	34	24·00
	33	67	100	85	111	111 =	507

"The number of deaths that occurred among these cases was 4, or about 0·79 per cent., which shows that bronchitis cannot be considered a very fatal disease in this country.

"The next table shows the statistics of pneumonia:—

TABLE XI.—*Pneumonia.*

	1870.	1871.	1872.	1873.	1874.	1875.	Percentage.
Spring	10	1	8	12	14	14	44·70
Summer... ...	1	1	4	4	4	3	12·88
Autumn... ...	5	1	3	8	2	5	18·18
Winter	5	2	5	8	3	9	24·24
	21	5	20	32	23	31 =	132

"From this we find that while diseases of the respiratory passages are most frequent in the autumn months, bronchitis and pneumonia are more common in the winter and spring. The number of deaths that occurred in this class (Table XI.) was 14, or 10·60 per cent.

"Croup is the most fatal of these diseases, and I have therefore separated it from the diseases of the respiratory passages, and given a separate notice of it.

"Many cases of this disease, of which no registry is kept, take place in the country districts, where the disease comes on suddenly, and death ensues before any medical assistance can be obtained; and some are brought into town in a hopeless and dying state, which circumstance increases the mortality shown in these reports.

Table XII.—*Croup.*

	1870.	1871.	1872.	1873.	1874.	1875.	Percentage.
Spring	...	...	...	...	1	4	10·62
Summer... ...	1	...	1	...	5	7	29·78
Autumn... ...	...	...	1	2	2	11	34·06
Winter	...	5	1	2	...	4	25·53
	1	5	3	4	8	26 = 47	

"The number of deaths that occurred from this disease was 13, or 27·66 per cent.; and it will be seen that it is most prevalent in the autumn and winter, the same seasons in which the respiratory passages are most affected by disease.

"Nearly every year some cases of influenza occur, but occasionally a regular epidemic sets in, as in the years 1872 and 1874, when nearly everyone in the community suffers more or less from it. This very year (1876) there has been a widespread epidemic of the disease all over the colony, attacking both natives and Europeans.

"Of course the number of cases attended by me, and reported in these statistics, does not show the number of cases that actually occurred, as all the milder ones take care of themselves, without applying to any medical practitioner; and often when called to see one member of a family, the prescription given is used for each succeeding case that may occur.

"The following table gives the statistics of influenza :—

TABLE XIII.—*Influenza.*

	1870.	1871.	1872.	1873.	1874.	1875.	Per-centage.
Spring	4	37	76	24	38	17	41·35
Summer... ...	4	21	22	...	22	2	14·96
Autumn... ...	6	15	...	12	39	30	21·09
Winter	3	8	11	17	22	46	22·55
	17	81	109	53	121	95	= 476

"One death occurred among these cases, giving a percentage on the whole number of cases of 0·21.

"Having now given statistics of the principal diseases of the respiratory organs, I come to phthisis, the disease for which patients are especially recommended to come to South Africa.

"The total number of cases of this disease that have come under my notice in the six years 1870 to 1875 is 41, and of these 13 cases were colonial-born persons, and 28 came from England, some of them especially on account of disease of the lungs.

"According to my experience, cases of phthisis in colonial-born persons are more rapid, and give less hope of amelioration by treatment or change of climate, than in home-born persons.

"Patients who come here with slight deposits of tubercle at the apex of the lung, but where softening has not taken place, and cavities have not been formed, have a very good chance of a healthy life by taking ordinary care of themselves: by not exposing themselves to the night-air after a hot day, or suddenly changing their clothing because the weather has taken a sudden change, and especially by always wearing, both in summer and winter, flannel underclothing—underclothing made of *wool*, not mixed with any cotton.

"No person should be recommended to come here in whom the disease is much advanced. The climate is good for such cases, but the manner of living here is much rougher than at home; and to a stranger coming here the want of home comforts cannot be supplemented.

"Travelling by cart over rough, stony roads is very wearisome to a person in health, and the jolting is peculiarly bad for invalids.

"The hotels, except in the large towns, are not comfortable for invalids; and, even in the best hotels, very little trouble is taken to make an invalid comfortable. Besides, the cooking is not of a very superior character—well enough for persons in health, but unsuited for a phthisical patient with a weak digestion.

"Travelling by bullock-waggon, as described in a recent work on South Africa as a health-resort, is very pleasant for persons in health, and even for an invalid while the weather keeps fine; but should rain set in, all the pleasure will disappear. Besides, the pleasure of such travelling depends on the number of your servants, and cannot be easily undertaken without a good outlay of money.

"To asthmatical patients, who have no organic disease of the lungs, this open-air life of waggon travelling is very beneficial. I have met cases of this kind, who never had a single attack of asthma while living in a waggon, but who suffered severely as soon as they resided in a house.

"Among the native population (the Kaffirs), cases resembling phthisis are often met with; but I believe that most of these are cases of pneumonia becoming chronic through neglect. This is more especially the case among the Christianised Kaffirs, because the wild Kaffir wears only a blanket, and when he gets wet, as soon as he returns to his hut he throws off his blanket, and does not sit or sleep with the wet blanket round him, but lies naked on a mat before a fire. But the Christianised Kaffir, who wears European clothes, does not change them when he gets wet, as it is too much trouble, but keeps them on and sleeps in them, and is thus, through the help of civilisation, more subject to bronchitis and pneumonia, the latter often, through neglect, terminating in abscess of the lung.

"The Hottentots and Bushmen are nearly all scrofulous, and phthisis is very common among them.

"To sum up this paper on the diseases of the respiratory organs, we find that, out of the total number of cases of disease observed in the six years (viz., 1837), 369, or 20 per cent., occurred in the summer months; 440, or 23·9 per cent., occurred in the autumn; 458, or 24·9 per cent., occurred in the winter; and 570, or 31 per cent. in the spring; but the most serious forms of the disease, except croup, occurred in the winter and the autumn.

"The total number of deaths that occurred, including 13 from phthisis, was 47, or a percentage of 2·55 on the whole number of cases. As an appendix to the diseases of the respiratory organs, I may mention that pertussis, which is such a dangerous disease at home, is not at all so here when children are taken ordinary care of. There was an epidemic of the disease during the spring and December, 1870, and January and February, 1871, during which I attended over 100 cases of the disease, and only three deaths occurred; and during the autumn and winter of the year 1876 there has been another epidemic, and at the same time a violent epidemic of influenza, and yet I have not heard of any deaths. In my own practice I have been called to see over 120 cases."—("Med. Times and Gaz.," April 7, 1877, and Aug. 4, 1877).

CANADA.

(*Report by* William Osler, M.D., L.R.C.P., Professor of the Institutes of Medicine, McGill University, Montreal.)

Diphtheria.—Dr. J. S. Benson, of Chatham, New Brunswick, strongly recommends chlorine water in the treatment of this affection. He reports two very severe cases, and refers to many others, treated successfully in this way—three teaspoonfuls being given every two hours, and cold applications made to the throat.—("Canada Lancet," March, 1877.)

Dr. Guy R. Cook, of Gananoque, advocates, in addition to the local application of cold, the administration of chlorate of potash and hydrochloric acid, a drachm of the latter being added to eight ounces of a saturated solution of the former, a teaspoonful to be given every two or three hours.—("Canada Medical and Surgical Journal," Nov., 1876.)

Dr. Grant, of Ottawa, referring to the epidemic which prevailed in that city during the winter of 1876 to 1877 states that he has found the application of simple tincture of iodine to the throat, once a day, combined with warm fomentations externally, by means of sponges, together with supporting diet, the most advantageous method of treating this affection. In twenty-five cases so treated, no death occurred.—("Canada Lancet," July, 1877.)

Cases of Tracheotomy, reported by Dr. Atherton, Fredericton, N.B.,

Case 1, child, 22 months old, had swallowed a couple of drachms of creasote. Paroxysms of spasm of the glottis recurred frequently for five to six hours after the accident, and finally the dyspnœa became so great that tracheotomy was demanded. A double silver canula was introduced, giving great relief. Complete recovery within ten days.

Case 2, child, 14 months old, two days before, while gnawing the core of a roasted apple, was seized with a severe fit of choking and vomiting. The breathing steadily increased in difficulty after the accident, and at times the spasms were very bad. When first seen there was marked stridulous respiration. Relief to the breathing followed the operation, but no foreign body could be felt. Five days after, the breathing again becoming difficult, the incision was extended, and a piece of the core of an apple came down into the wound and was seized with a pair of forceps. Recovery complete.—("Canada Lancet," July, 1877.)

Pneumonia with Meningitis, reported by Dr. Reddy:—

H. F., æt. 38, had experienced considerable mental trouble owing to the death of his wife about two weeks before. The symptoms pointed rather to typhoid fever, for which the case was at first mistaken. He was delirious throughout, and presented a temperature range from 101° to 105°. Death took place on the fourth day after admission. At the post mortem the upper lobe of the right lung was found to be in a condition of red hepatization. On removing the brain the meninges were found extensively inflamed. A thick layer of yellowish white lymph filled up the longitudinal fissure, and extended over the convolutions of the frontal lobes, and, to a less extent, over the parietal. All the parts at the base were imbedded in lymph of the same character, which was prolonged also into the Sylvian fissures. Ventricles contained a moderate amount of fluid; fornix and septum were very soft.—("Can. Med. and Surg. Journ.," Aug., 1876.)

Cirrhosis of Lung.—The case occurred under Dr. Ross, Prof. of Clinical Medicine, McGill University, in the General Hospital, Montreal. The patient, a woman æt. 37, presented all the physical signs of fibroid contraction of the right lung, with dilatation of the right heart; tricuspid regurgitation, general ascites, and albuminous urine. The lung affection dated back four years. At the autopsy the right chambers were much dilated, and slightly hypertrophied; tricuspid orifice very large; admitting the four fingers to the second joints. The right lung was universally adherent; contained a cavity at the apex, and in the rest of its extent was represented by dense fibroid tissue, in which, near the root, were several dilated bronchi. No part of the organ was crepitant. An irregular cavity existed at the apex of the left lung; the remainder of the organ was very emphysematous, but presented no other degenerative signs.—("Can. Med. and Surg Jour.," Feb., 1877.)

Tuberculosis—Dr. Ross reports two cases:—

The first is interesting from the fact that though marked symptoms of meningeal inflammation were present during life, the cerebral lesions found post mortem were slight, and the general tuberculosis was also imperfectly developed. E. H., æt. 21, ill for a fortnight with severe headache, vomiting, and constipation, admitted on 27th of October. Active delirium for the first three days, vomiting and dilated pupils; subsequently she became quieter, but lay in a dull, stupid condition. Urine albuminous, pupils dilated, internal strabismus of right eye. Death took place on seventh day. At the autopsy the parts about the optic nerves appeared matted together, no lymph or miliary tubercles discoverable. On spreading out the

Sylvian arteries, small tubercles were found surrounding the finer branches; ventricles somewhat distended; fornix and septum very soft; a few miliary granulations in the lungs and on the pleura; bronchial glands caseous.

The second case, a girl aged 14, was admitted with well developed symptoms of tubercular meningitis, which progressively increased without any special features, death occurring, from coma, on the fifth day after admission. At the autopsy much gelatinous lymph about the commissure and the base generally; tubercles about the small vessels; ventricles much distended; central softening marked. —("Can. Med. and Surg. Jour.," Aug. and Dec., 1876.)

Cheyne-Stokes' Respiration.—Dr. Ross reports the occurrence of this phenomenon in a case of unilateral convulsions, consequent upon drinking. Respirations 16 in the minute, showing a peculiar irregularity in rhythm. A distinct cessation of breathing occurs every 1¼ minute, and lasts ten seconds; then the respirations begin gently and slowly, becoming more laborious and deeper, and gradually growing shallow again until another interruption occurs. The ascending and descending rhythm are distinct, and the period and duration of the interruption are always the same. When the breathing stops, the limbs, particularly the left arm and leg, become rigid and flexed, and again become flaccid when the breathing goes on.—("Can. Med. and Surg. Journ.," June, 1877.)

Respiratory System in Hæmorrhagic Small-Pox.—Dr. Osler, in a paper based upon 27 cases, reports the following with reference to the respiratory organs:—"Hæmoptysis occurred in five cases; in one it was profuse and arterial. The sputa hawked up were frequently streaked with blood from the bronchial tubes and fauces." "The respirations were usually increased in frequency in the early stage, and this without any discoverable disorder in the lungs, and were out of proportion to the intensity of the fever. In the case of a negro whose respirations the morning after admission were 32, and the temperature 101°, after examining the lungs and finding nothing to account for the acceleration, my suspicions were aroused, and on careful inspection I was able, even on the dark skin, to detect the hæmorrhagic condition in and about the papules. This symptom alone directed my attention to his dangerous condition, which might otherwise have escaped observation, as there were no hæmorrhages from the mucous membranes. An interesting and by no means infrequent phenomenon was the disturbance in respiratory rhythm, first drawn attention to by Drs. Cheyne and Stokes. It was noticed chiefly during the last 24 or 36 hours of life." Referring to the pathology of the disease, it is stated that in seven post mortems "the *heart* substance was firm, and dark in colour; in several instances minute ecchymoses were observed in the endocardium and in the muscular walls." "Both layers of the *pleura* contained ecchymoses in six cases. The *lungs* were crepitant, and contained much blood in dependent parts. In five instances apoplectic spots were found, none of them larger than a walnut."—("Can. Med. and Surg. Journ.," Jan., 1877.)

Fatty Degeneration of the Heart in Pernicious Anæmia.—Dr. Howard, Prof. of Medicine, McGill University, in a paper read before the International Medical Congress, Philadelphia (*see* Report), describes this condition in two of the cases upon which his paper was based.

Drs. Gardner and Osler describe the heart in a case of the above disease as "having a yellowish, faded-leaf appearance, especially marked in the walls of the left ventricle." "The fibres are in a condition of extreme fatty degeneration, the striæ being obscured by the number of densely crowded droplets and fine molecular fat."—("Can. Med. and Surg. Jour.," March, 1877.)

Aneurism of the Aorta.—Dr. Roddick, Prof. of Clin. Surgery, McGill University, reports a case of aneurism of the ascending part of the aorta in a soldier, presenting the usual symptoms, and in addition pressure upon the veins at the root of the neck, causing great swelling of the face, and cyanosis. It burst into the right pleura. At the autopsy 3 lbs. 10 ozs. of blood were found in this sac. The aneurism involved the aorta from the sinuses of Valsalva to the origin of the innominate.—("Can. Med. and Surg. Jour.," Oct., 1876)

Dr. Osler, in "Pathological Report of General Hospital, Montreal," for the year ending May 1st, 1877, reports three cases:—

1. A. B., æt. 32, a well-built muscular man. Aneurism of commencement of thoracic aorta, the size of the fist, the posterior wall of the sac formed by the 3rd, 4th and 5th dorsal vertebræ, which are bare. Death from general tuberculosis. The aneurism was unsuspected during life, and, as far as could be ascertained, he had not had any symptoms referable to it.

2. J. C., a well-built muscular man, æt. 40, sacculated aneurism of ascending aorta; erosion of cartilages of third, fourth, and fifth ribs with corresponding portion of sternum. Rupture into the right pleura; clot removed from it weighed 3½ lbs. The sac communicates with the right side of the ascending aorta by an orifice 1½" in diameter.

3. Sacculated aneurism of aorta, the size of a billiard ball, at termination of arch, projecting from the anterior aspect of the vessel towards the right side. Death from pneumonia. Aneurism unsuspected during life.

Small Aneurisms of branches of Pulmonary Artery.—Dr. Osler, in the Pathological Report above-named. J. L., æt. 44, ill for some time with phthisis, died suddenly of hæmoptysis, seven cavities, five of which contained blood and clots, found in the lungs. On slitting up the branches of the pulmonary artery, three aneurismal pouches, the size of large peas, were met with in vessels running in the walls of cavities. They appeared to be simple diverticula from the vessels, the *intima* being continued into them. From the side of the cavities they look like little irregular swellings on the wall. The origin of the hæmorrhage was not discovered though all the branches of the pulmonary artery in the right lung, and lower lobe of the left, were slit up. The vessels of the upper lobe of the left lung were, by mistake, not examined.

Colorado as a Health-resort for Consumptives.—Dr. Kennedy (Prof. of Surgery, Bishop's College), relates his experience of a winter spent in that State, which is now much frequented by invalids from Canada and the United States. From his paper we make the following extracts:—

"In relieving certain morbid conditions of the lungs Colorado is fast acquiring for itself a well-deserved reputation. From personal observation, I believe, if there is any place where pulmonary consumption can be arrested or cured, it is there. . . . .

"It is astonishing how some of these advanced cases receive a new lease of life, if there remain the least portion of healthy lung to carry on respiration. The disease appears to receive a check and remain in *statu quo*. Night sweats diminish or cease altogether, the cough becomes less troublesome, and expectoration lessens, and the loss by sputa is more than balanced by increased appetite and nutrition. . . .

"It is a fact, well understood there, that advanced cases which enter Colorado, and improve, can never again with impunity leave it.

"How many men have I met, all with the same story! To look at them, one could hardly suppose they had been victims of phthisis. No cough or expectoration, good appetites, and bodies well nourished. It seemed impossible that disease had ever attacked them, and that it was impossible for it to return. . . . .

"Of all the morbid conditions of the lungs, none receive more benefit than those in which hæmorrhage is an urgent symptom, no matter what the cause. I have met with many persons who had suffered from repeated attacks of hæmoptysis previous to their residing in Colorado, but in whom there had been no return since. One medical gentlemen has tried several times to resume his former position, but each time was forced to return, until now he feels it useless to run any further risk; and, although he has been settled several years in Colorado, there has been no hæmoptysis or trouble since. In this case there was strong hereditary predisposition to phthisis."—("Can. Med. Rec.," Aug., 1876.)

AUSTRALIA.

(*Report by* J. Williams, M.D. Edin., &c., &c., Physician to the Melbourne Hospital.)

In a recently-published Essay on Phthisis, "A Third Analysis of the Statistics of Phthisis in Victoria," Mr. William Thomson, of South Yarra, has advocated the theory "that climate is powerless to modify or prevent the development of that disease, or act as a remedial agent in its cure," and has endeavoured to prove, by the aid of statistics, "that tubercular consumption is increasing in Victoria, and is as general and fatal in it as in England; that the Australian or native-born of our population have a special predisposition to it, and that the disease is proving fatal to them at a rapidly-increasing ratio." *

Dr. Singleton, in a very carefully-constructed paper, read before the Medical Society of Victoria, maintains that Mr. Thomson's views, as expressed above, are "utterly fallacious and untenable." After referring to the opinions of British and foreign writers, on the effects of temperature, humidity, drainage, and altitude on phthisis, Dr. Singleton says:—

"It might very reasonably have been inferred from these facts, that Victoria, whose soil as a rule is well drained naturally, and free from dampness, with an average temperature 10° higher than that of England, and having so low an amount of humidity of the atmosphere, would be favourable for preventing the formation of phthisis, and also for promoting its cure. I have prepared a few tables, taken from the South Australian and English statistics, giving the death-rates from phthisis at certain ages, compared to the same ages of the population. Mr. Hayter, the Government statist, has, in his Year Book, intimated that between the ages of 20 and 35 there was, at the ceusus of 1871, a deficiency of the population amounting to 43,000 (I suppose to bring it into harmony with that of the same ages in England). It would therefore be necessary, in any calculation or comparison made with other countries or former censuses, to take this into account. I have done so in every instance, by adding this deficiency to the population, and its full complement of death rates to that returned in the census, the more so as four-fifths of the entire death-rate from phthisis in England takes place under the age of 35.

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* See "Dr. Dobell's Reports on the Progress of Medicine in different parts of the world," Vol. II., 1870," for the discussion of this subject up to that date by Drs. Bird and Thompson.

TABLE OF MORTALITY FROM PHTHISIS, AND AVERAGE OF FIVE YEARS.

	VICTORIA.				ENGLAND, 1871.	
Years.	Death-rate for 5 years, from Phthisis.		Population.		Deaths from Phthisis.	Population.
	'60 to '64.	'70 to '74.	1860 to 1864.	1870 to 1874.		
1st year ..	766	888	539,337	709,839	53,376	22,712,323
2nd ,, ..	755	841	541,025	738,725		
3rd ,, ..	707	876	548,087	760,991		
4th ,, ..	716	945	561,322	780,362		
5th ,, ..	673	1,011	580,160	798,688		
	3,618	4,561	2,778,731	3,788,605		
Average ..	723	912	555,746	757,221		
		88		43,000		
		1,000		800,721		
One in ..	768	800	of the whole	Vict populat	One in 425 of of	the population England.

In South Australia, where the native-born population greatly preponderates, there is only one death to 1,176.

	VICTORIA.				ENGLAND, 1871,	
Age.	Mortality from Phthisis, under 35 years of age.		Population under 35 years of age.		Mortality from Phthisis, under 35 years of age.	Population under 35 years of age.
	1861.	1871.	1861.	1871		
Under 5 ..	32	20	91,514	116,688	2,554	3,071,276
,, 10 ..	9	6	53,265	106,503	1,022	2,706,526
,, 15 ..	15	8	34,535	85,585	1,670	2,424,239
,, 20 ..	27	42	33,117	54,556	5,229*	2,180,412*
,, 25 ..	71	84	56,147	49,422	7,285	2,004,860
,, 30 ..	151	130	81,073	54,270	13,808	1,780,567
,, 35 ..	156	118	69,308	57,357	10,282†	1,559,995†
	461	408	418,959	524,381	41,850	15,727,875
		88		43,000		
		496		567,381		

* Total deaths under 20, 10,475 ; total population under 20, 10,382,453.

† Total deaths 20 to 35, 31,375 ; total population 20 to 35, 5,345,422.

Mortality from Phthisis in	Under 20.	20 to 35.	Birth to 35.
Victoria, 1861, one in	2,559	546	921
„ 1871 „	4,780	614	1,144
England, 1871 „	991	170	374

MORTALITY FROM TABES MESENTERICA.

Victoria. Average for five years.		England. Average for 1871.
1860 to 1864.	1870 to 1874.	
One death to 6,000	One death to 10,981	One death to 3,389*

* Or three times greater than in Victoria.

Melbourne.					England, 1871.		
Age.	Mortality from Phthisis, under 35 years of age.		Population under 35 years of age.		Age.	Mortality from Phthisis, under 35 years of age.	Population under 35 years of age.
	1861.	1871.	1861.	1871.			
Under 5	14	12	24,243	30,204	Under 20	10,475	10,382,453
10	4	2	15,592	27,849			
15	9	6	11,370	24,060			
20	15	23	10,345	17,650	20 to 35	31,375	5,345,422
25	39	52	13,590	17,476			
30	59	73	17,324	17,355			
35	71	65	15,364	15,743			
	211	233 22*	107,828†	150,337 10,750‡		41,850	15,727,875‖
		255		161,087§			

* Add to 1871 the one-fourth or complement to population and death-rate under 35.

† One death to each 511 of the inhabitants of Melbourne this year, 1861.

‡ Add to 1871 the one-fourth of population, or complement for ages under 35.

§ One death from phthisis to every 631 of the inhabitants of Melbourne under 35 years of age.

‖ Or one death from phthisis to every 375 of England's population under 35 years of age.

VICTORIA.					ENGLAND, 1871.		
Age.	Mortality from Phthisis, from birth to 35 years of age.		Population, from birth to 35 years of age.		Age.	Mortality from Phthisis, from birth to 35 years of age.	Population, from birth to 35 years of age.
	1861.	1871.	1861.	1871.			
Birth to					Birth to		
5	32	20	91,514	116,668	5	2,554	3,071,276
10	9	6	53,265	106,503	10	1,022	2,706,526
15	15	8	34,535	85,585	15	1,670	2,424,239
20	27	42	33,117	54,556	20	5,229*	2,180,412*
25	71	84	56,147	49,422	25	7,285	2,004,860
30	151	130	81,073	54,270	30	13,808	1,780,567
35	156	118	68,308	57,357	35	10,282†	1,559,995†
	461	408	418,959‡	524,361		41,850	15,727,875
		88		43,000			
		496		567,361 §			

* Total deaths under 20, 10,475 ; total population under 20, 10,382,453—or 1 to 991.
† Total deaths 20 to 35, 31,375 ; total population 20 to 35, 5,345,422—or 1 to 170.
‡ One death to 908 of population. § One death to 1,144 of population.

1861.		1871.	
Mortality from Phthisis.	Population.	Mortality from Phthisis.	Population.
755	541,025*	841	738,725
		88	43,000
		929	781,725 †

* One death to each 716 of the population. † One death to 841 of population.

Or, in an average of five years in each decennial :—

1860 TO 1864 INCLUSIVE.			1870 TO 1874 INCLUSIVE.	
Year.	Mortality from Phthisis.	Population.	Mortality from Phthisis.	Population.
1860	766	539,337	888	709,839
1861	755	541,025	841	738,725
1862	707	548,087	876	760,991
1863	717	561,322	945	780,362
1864	673	589,160	1,011	798,688
	3,618	2,778,931	4,561	3,788,605
Average ..	723	555,786*	912	757,721
			88	43,000
			1,000	800,721†

* One death from phthisis to 768 inhabts. † One death from phthisis to 800 inhabts.

TABES MESENTERICA.

Victoria, 1870 to 1874.			England, 1871.		
Year.	Average Death-rate.	Population.	Year.	Average Death-rate.	Population.
1870	65	709,839	1871	6,700	22,712,256†
1871	85	738,725			
1872	63	760,991			
1873	54	780,362			
1874	68	798,688			
	335	3,788,605			
Average ..	67	757,721*			

* One death to 11,488 of population of Victoria.
† One death to 3,389 of England's population.
N.B.—In census 1860 to 1864 the death-rate was 40 per cent. higher.

DISEASES OF RESPIRATORY ORGANS.

Victoria. Average of five years, 1870 to 1874, inclusive.		England. Average for 1871.	
Average Death-rate.	Average Population.	Average Death-rate.	Average Population.
1,123	757,721*	82,142	22,712,256†

* One death to 670 of Victorian population.
† One death to 275 of England's population.

"In the Table No. 1, I have given the average deaths from phthisis to the population of censuses 1861 and 1871; also of England for the latter census, showing about 100 per cent. more in England than Victoria; also the average of five years of Victoria, 1860 to 1864 and 1870 to 1874 (inclusive), and of England 1871, from which it appears that 1 in 768 died in the former, but only 1 in 800 in the latter; while that of England was over 90 per cent. higher than in Victoria, or 1 in 425.

"In examining the question as to whether there was special predisposition of the Australian or native-born of our population to this disease, as asserted by Mr. Thomson, or not, it is necessary to draw attention to a fact of some importance, which seems to have escaped his notice, or he would hardly have written on the subject as he has. It is this, namely,—the census return in 1871 gives the large number of 358,226 as Australian or Victorian born, nearly one-half the entire population at that census. It might, without any stretch of fancy, be assumed that these were, with very rare exceptions, included in the population under 35, numbering 524,381 (by the recorded numbers in the Victorian Statistics), and that as by far the greater proportion of these to the different ages were under 20 years of age, that the latter especially would give unmistakable evidence as to the liability to, or special immunity from, this most destructive of all other diseases, when compared with those of England at the same ages. The results of such comparison may be seen in the annexed table, which shows under 35 (from birth) there was 1 death from phthisis to 921 of the population in 1861, while there was but 1 to 1144 in 1871; and in England, same year, 1 death to 374, 200 per cent. more than in Victoria, or 3 deaths in England for 1 here in a similar number of the population.

"The contrast of those under 20 is far more remarkable, as in 1861 census there was 1 death to 2,559 under 20; in 1871 census, 1 death to 4,780; and in 1871 census, England, 1 death from phthisis to 991 of the population, or 400 per cent. greater. Between the ages 20 and 35, there was 1 death in England to 170 inhabitants at the same ages; 1 to 485 in Victoria, or nearly 3½ times more in England. In 1861 the death-rate was but 1 to 546, very little less than in 1871.

"This great immunity of the native-born of Victoria from this much-dreaded disease, is fully sustained by a comparison of the death-rates from tabes mesenterica, or consumption of the mesenteric glands, a cognate disease of phthisis, mostly confined to children, and therefore to the native-born here, there being but 1 death from it (in the average mortality from 1870 to 1874) to 10,981 of the population, while that of England was 1 to each 3,389, or 220 per cent. greater mortality from it in England than here; and a considerable diminution in Victoria from the census in 1861 (upwards of 40 per cent.).

"The same testimony is given by a comparison even of Melbourne, with its hospitals, benevolent and immigrants' homes, where so many die of phthisis from the rural districts, when compared with the death-rates of England, rural and urban, under 35 years of age. In 1861 there was 1 death to 511, in 1871 only 1 death to 631 of Melbourne population under 35; while in the whole of England there was 1 death to 375 of the same population. This is more remarkable when the large number of immigrants from Europe, hopelessly affected with this disease, who from time to time arrive here but to swell the bills of mortality from it, is taken iuto consideration.

"The very small amount of death-rate from pneumonia, bronchitis, and all other diseases of the respiratory organs, in Victoria, being but 1 death to 670 of the population, while in England the same is 1 to 275, or 150 per cent. greater than Victoria, is also worthy of note. With such facts as the above, and a general death-rate from all diseases 33 per cent. less than that of England, rural as well as urban, it may with confidence and truth be made known to the world that Victoria is not excelled, if equalled, for salubrity, by any other colony, more particularly as a means of preservation from phthisis

and other tubercular diseases, especially among the native-born; and with reasonable hope, based on statistical information for past years, that as this class predominates, the death-rates from these, as well as all lung diseases, will continue, with ordinary precautions, to be reduced to a minimum; while Victoria may, ere long, become even more of a sanitarium to less-favoured countries, by a careful testing and noting of the experiences and scientific observations of American and European writers on these interesting subjects by our medical men here, and thus conferring a lasting public benefit."—("Australian Medical Journal," Oct., 1876.)

At the discussion which ensued on the above paper, Baron Von Mueller, F.R.S., remarked:—"Having come, nearly thirty years ago, to Australia, to save my life, while in danger of being carried off, in the cold clime of Scandinavia, by phthisis, of which both my parents died, I was grateful to Australia for the prolongation of my life. In reference to Dr. Singleton's paper, I am eager to draw particular attention to that passage which laid stress on placing phthisical patients on mountainous elevations, having experienced in my own explorations the sanitary effect of the *lightness* of the air at considerable altitudes. When, in 1853, 1854, and 1855, I was the first to traverse many parts of the Australian Alps, and carried on triangulations there, I felt inexpressibly easy and delighted in inhaling the air of lofty heights, my inspirations being free of the oppressions of the lowlands. I had to determine the zones of vegetation at the time, which I did by testing the boiling-water point; and it may readily be imagined that, as at every thousand feet ascent nearly two degrees Fahrenheit less are needed to boil water, a great facility was experienced at six or seven thousand feet high, where about a dozen degrees of heat less are required to change water into steam vapour. In our latitudes, however, such altitudes are too trying for patients in danger of pulmonary consumption, because our climate in our higher ranges becomes too cold for them. Yet, in the summer months, the best chance for recovery would here be attained by placing consumptive people at some moderate elevations, particularly under the favourable influence of an equable forest temperature, instead of keeping the poor sufferers in towns, or indeed anywhere in low lands, subject to sudden changes of the air, often far too dry and too cold, or again too hot. I deem it also injudicious to subject such patients, in an advanced stage of the disease, to a voyage half round the globe, and have often been advising that far less distant localities should be sought by European patients — for instance, the high mountains of Ceylon, or Venezuela, which can be easily reached, even by much suffering invalids, being nearer the harbours, and where precisely the temperature most salutary at any particular season can be chosen."

Dr. Patrick Smith remarked that the advantage of Victoria, as a residence for consumptive invalids, depended upon the stage of the disease, and in some measure upon the social condition of the patient. If a phthisical patient who came to Victoria to be benefited, had to sit every day at work in an office, he would certainly derive no advantage from coming here; and he thought we should do all we could to discourage such a class from coming out.

Dr. Day was of opinion that there are fair grounds for assuming that our Australian climate is especially adapted for consumptive people. The atmosphere, for instance, is, in many places, charged more or less with vapour of essential oils, given off from the leaves and flowers of the various species of Eucalyptus with which this colony abounds, and these oils have been shown to possess the property of exalting the purifying powers of ordinary atmospheric oxygen, by converting a portion of it into peroxide of hydrogen. Dr. Day further remarked "The influence of light over consumptive people in this colony must not be forgotten. On comparing notes with some of my friends at home, I have found that most hydrocarbons, including human and other fats, absorb oxygen much more readily in Australia than in England, and this is probably due to the comparative clearness of our atmosphere, which allows a larger amount of the chemical rays of light to pass unobstructed than in England, where they are to some extent filtered out by the clouds."—("Aust. Med. Journ," Oct. and Nov., 1876.)

Aortic Aneurism.—Dr. Hinchcliff, Resident Surgeon at the Bendigo Hospital, exhibited a very fine aneurism, at the Medical Society of Victoria, on April 5th, 1876. It involved the descending aorta, and the bodies of the 6th, 7th, 8th, 9th, 10th, and 11th dorsal vertebræ were partly destroyed. There were also dilatation of the ascending portion of the arch, with extensive atheroma, stenosis of the aortic opening, and thickening of the valves. Notwithstanding the extensive implication of the vertebræ, there was no symptom during life indicating that erosion was taking place.—("Aust. Med. Journ.," April, 1876.)

SPAIN.

(*Report by* WM. JELLY, M.D., F.R.C.P., of Madrid, Physician to H. M. Doña Isabel II.).

Before entering on the special part of this report, it may be as well to give a general idea of the climate of Spain, so that it will be easier to comprehend the peculiarity of our position in Madrid, with its climate, diseases, etc., etc.

With the exception of the provinces that border on the Atlantic and the Bay of Biscay, viz., Galicia, Asturias, Santander, Guipuzcoa, and Viscaya, as also those which run into the spurs of the Pyrenees, viz., Alava, Navarre, and Arragon, the climate is exceedingly dry; the above provinces receiving the moisture from the Atlantic, brought by the prevailing W. and S.W. winds and retained by the high range of heavily wooded mountains that bound these provinces, producing a heavy rain-fall more or less throughout the whole year. By the above-mentioned high barriers the air is deprived of its moisture, so that the central and southern provinces are exceedingly dry, so much so, that in some parts, such as La Mancha, years pass without a drop of rain. Consequently from such diversity of climate, there is much diversity of soil and produce, and also of phases of disease.

Madrid is situated some 2,500 feet above the level of the sea, on a desert plateau of sand of great depth, at the termination of one of the spurs of the Guadarama mountains, which are covered with snow for many months of the year. There are neither mountains, lakes, rivers, nor trees to produce rain.

Madrid stands in a sort of basin surrounded by the Guadarama mountains on the north and east, and by the hills of Toledo and Guadalupe south and west. The only water is the so-called river Manzanares, which sluggishly glides round the base of the city, almost dry in summer, yet performs the three-fold duties of cloaca, and washing, and bathing tub to the not over cleanly or fastidious inhabitants of this City of Hidalgos. The foul emanations from its bed during four or five months of summer forbid the approach of any one whose lingual or olfactory nervous system is not destroyed, to take a ramble near its banks. Hence the climate is excessively dry, the evaporation ranging from 5° to 13°, in the house from June to November, while the temperature during some months ranges from 65° to 84° Fahrenheit indoors in the shade, the maximum being during July and August, in the sun, from 116° to 125°.

The prevailing winds of spring, summer, and autumn are S.E. and S.W., often in spring and autumn bringing comforting and health-giving showers of rain, while during winter, from December till March E. and N.E. prevail, most frequently in the form of a gentle zephyr, which called forth the ancient local proverb, "El aire de Madrid en el invierno es tan sutil que no apaga una vela ó candil, pero apaga la vida del hombre."—Anglice. "The winter air of Madrid is so gentle and soft, it will not blow out a candle, but it is strong enough and penetrating enough to kill a man," the first part is certainly true, but the latter part as regards a *healthy* man is false. I have travelled much in every variety of climate, but never have experienced such delightfully bracing, joyous, physical feelings, as when this gentle zephyr blows.

The degree of frost ranges from 5° to 10°; there is no wet, sloppy, or damp and foggy weather to embarrass the full play of heart and lungs; now and again some snow, although last winter none at all. The water supply is excellent and abundant from the southern spurs of the Sierra Guadarama, brought in open canals to reservoirs near the city, whence it is distributed in large iron pipes to fountains in every district in the city, and thence it is carried in barrels by Galician water-carriers to all the houses, where it is received into a large earthern moveable jar or cistern, called "Tinája," which in well-regulated houses is cleaned out twice a month. The waterman brings three or four fresh barrels daily, according to the demands of the family, so that there is no connection or relation whatever between the water and the sewage and drainage system, either in the houses or above or below ground. To this, and this alone, I attribute our complete immunity from enteric fever in Madrid; the fall for sewage and drainage is excellent, and has easy and rapid descent to the before-mentioned cloaca, or so-called river, Manzanares, but the trapping of closets is very bad, and perhaps little understood, or too expensive for the landlords to undertake—hence we have smells enough and to spare. All other zymotic diseases are common enough, and neither Government nor people can be drilled or persuaded into the doctrines of contagion and infection of any diseases except phthisis, syphilis and scabies. In the contagiousness of these everybody believes, and for the cure of the two latter (which in their minds belong to the same family of disease) there is a public hospital, while there is none at all for the treatment of consumption. Where a patient is supposed to have died from phthisis, no matter whether rich or poor, in mansion or hovel, the house is immediately deserted, and will remain vacant for a long time. Even when the doctor in attendance fancies or suspects (because it is often only a fancy) that his patient died from phthisis, he will give a false death certificate, so as not to implicate the interests of those concerned.

Despite the exquisite climate, soil, pure water, and separate drainage, etc., of Madrid, phthisis, acquired and hereditary, in its various forms, is one of the most common and general diseases pervading all classes. If any intelligent foreigner who has heard anything of the supposed miracle-working effects of asses' milk in Spain could take a walk through Madrid between 5 and 9 a.m., he would meet in every street squadrons of she asses with bells round their necks, trotting as hard as they can, to be milked at the doors of their never ceasing faithful customers, from the 1st of September till the middle of May, and he would at once come to the conclusion that every being in Madrid had phthisis or some other pulmonary affection. It is given to babies as well as to the aged if there is the slightest cough, loss of voice, or suspected pulmonary weakness, and each one must take the cabalistic dose of this wonderful asses' milk, *fasting*, nine days in succession. In vast numbers of cases the effect is just the contrary to what was hoped, as it induces diarrhœa, vomiting, loss of appetite, etc.; but still they hold on to this miracle-working remedy.

There are no trades or industries here to induce diseases of the thoracic viscera, except perhaps a few stone-masons, bricklayers, and their helpers, besides the dustmen and rag-gatherers; nevertheless, chest diseases are the most common and fatal of any here. The following facts will readily explain the reasons why it is so:—

When a child is born, it is swathed round the chest, from axilla to umbilicus, with a heavy double-twilled roller, 3½ to 4 inches wide and 6 or 7 yards long, almost as tightly as it can be drawn, and over it a long thick coarse woollen skirt, coming over the feet some 2 or 3 feet; above this another roller, which gives one the idea of an Egyptian mummy. The child is carried as erect as a soldier carries his musket—never horizontally, and this system is followed until the child is weaned, when he is from eighteen months to two and a-half years old. At the same time he is fed with all sorts of food, from birth, viz., soups, salads, sweets, meat, fish, etc., etc. Then, when put into short clothes, you see the creature with chest flattened at the sides, bulging sternum, ribs distorted into various forms, the abdomen standing out like a barrel, and his lower limbs thin and atrophied. From 7 years of age, if a boy, he begins to learn to smoke his cigarette, which soon tells its tale on the larynx, lungs, and heart. At 15 or 16 he has a coarse, cracked, unmusical voice, with harsh ringing cough and viscid expectoration, palpitation, etc.; and often, long before 15, to the above vices is added the abuse of the sexual organs in its foulest forms—masturbation, sodomy, prostitution, &c.—with nightly prolonged visits to crowded, overheated cafés (which abound more in Madrid than in Paris) filled with smokers, crowded theatres and dance-houses of every description—turning night into day. All these, joined to chronic alcoholism, acting on and through an organism impregnated with hereditary syphilis have made him ripe when manhood sets in for falling an easy prey to chest disease.

As the result of such a national so-called gay social life, we have a most miserably decrepit and degenerate race, whose offspring now fill the land with a rickety, scrofulous, cancerous, consumptive people. The above statements refer to Madrid and Madrileños only, because it must be borne in mind that Madrid is the Jerusalem of Spain and her colonies, so that it may truly be said that her only healthy inhabitants are those who come from the provinces and colonies, and who have made enough money to enable them to live here, which is the great ambition of all Spaniards. Indeed the health and wealth of Madrid is recruited from outside, but in the course of time—at most two generations—these also become true Madrileños, morally and physically.

From the foregoing statements it will be seen that phthisis, in every form, must be very common here,—pneumonic, tubercular, fibroid, and laryngeal, which I place in the order of frequency in which they have occurred in my practice, the two latter often combined with syphilis, and the fibroid most amenable to treatment, and often curable. While the pneumonic and laryngeal are least amenable to treatment, and most speedily fatal, the tubercular can be kept at bay for the longest period. Hæmoptysis proves speedily fatal if it sets in between June and the end of August and the patient is unable to leave Madrid, the dry heat of these months aggravating the evil much. Chronic bronchitis is common enough, in fact few are without it after 50 years of age. Pulmonary emphysema is very rare, and I have not seen one case of spasmodic asthma developed here, but I have met with many who, having come from the provinces, especially Malaga, after being in Madrid a short time, got entirely well. I have also seen several Englishmen, who were severe sufferers at home, begin to improve as soon as they entered the lower spurs of the Pyrenees, and ere they reached their destination become perfectly free from asthma.

I have not attempted to enter into the discussion of any special cases, or the pathological aspects of the above diseases. This latter is impossible in this country, as on no account is a post mortem permitted. My diagnosis has always been made from scrupulous examination and observation.

To give an idea of the temperature of Madrid at this season, (September), compared with the great diversity of temperature in various parts of the Peninsula, I send two extracts from this morning's paper. The degrees of dry and wet bulb are Centigrade standard.

OBSERVATORY OF MADRID.

Meteorological Observations of the 14th September, 1877.

Hours.	Temperature. Humidity of the Air. Thermometer.		State of the Sky.
	Dry.	Wet.	
6 a.m.	14·8	13·8	Slightly cloudy.
9 a.m.	19·4	15·6	do.
12 noon	25·9	17·8	Overcast.
3 p.m.	26·8	17·7	do.
6 p.m.	23·2	17·2	Nearly clear.
9 p.m.	20·0	15·9	Clear.

Maximum temperature in the shade	30·8
Minimum do. do.	15·4
Difference	15·4

Maximum temperature in the sun at 1·47 metres from the earth	37 6
Ditto, inside a crystal globe	57·6
Difference	20·0

TELEGRAMS received at the Observatory of Madrid in reference to the atmospherical state, at 9 a.m., in various parts of the Peninsula on the 13th of September, 1877.

Towns.	Temperature in centisimal degrees.	State of the Sky.	State of the Sea.
Bilbao	19·0	Clear	Slightly rough.
Oviedo	18·0	do.	do.
Coruña (7 o'clock) ...	13·6	do.	Agitated.
Santiago	15·0	do.	do.
Oporto	18·2	do.	Quite calm.
Lisbon	18·2	Overcast	do.
Badajos	12·0	Clear	do.
S. Fernando (7 o'clock)	19·8	Overcast	Calm.
Sevilla	23·0	Clear	do.
Tarifa	23·4	do.	Quite calm.
Granada	21·8	do.	do.
Cartajena	25·0	do.	Calm.
Alicante	28·0	Overcast	Agitated.
Murcia	23·0	do.	do.
Valencia	25·8	Clear	do.
Palma	25·2	do.	Calm.
Barcelona	25·0	Cloudy	Slightly rough.
Saragossa	13·8	Clear	do.
Soria	15·2	Cloudy	do.
Burgos	15·6	do.	do.
Valladolid	20·0	Nearly clear	do.
Salamanca	17·4	Clear	do.
Madrid	19·4	Slightly cloudy	do.
Escurial	20·0	Clear	do.
Ciudad-Real	21·0	do.	do.
Albacete	20·0	Overcast	do.

The great differences of temperature are well set forth in this table; they are from the Government Observatories. Note the vast difference between the heat at Coruña, on the west coast, and Alicante; the latter is more than double. The state of sky and sea is here also remarkable at the different points.

ITALY.

(*Report by* Adolphe Wahltuch, M.D., etc., etc., *Assistant Editor*.)

Anatomy and Physiology.

The Heart.—Dr. Paladino ("Movim. Med. Chirurg.," Nos. 27—30, 1876) examined fifty human and other animal hearts in a fresh state, and also with the microscope some hearts hardened in chromic acid and alcohol, coloured with carmine and exposed to a digestive solution of hydrochloric acid. As a result of such examinations he arrived at the demonstration of muscular fibres in the auriculo-ventricular valves. These valves receive their muscular fibres from the auricle and also from the ventricle. From the latter the longitudinal fibres only are continued, and end by bending round the ostium of the valves; from the auricle all muscular fibres, both longitudinal and lateral, pass into the substance of the valves, and end in such a manner as to reach, by way of a portion of the chordæ tendineæ, the wall of the ventricles, where they insert themselves into the papillary muscles. Paladino distinguishes within the chordæ tendineæ two sets of fibres, those of tendon proper and others connected with the muscles derived from the auricle. The transverse cords within the ventricular cavity are found in all hearts, but are less developed in man, and more so in mammalia. These cords traverse the cavity of the ventricle from the septum in the direction of the outer wall, and are composed of muscular fasciæ and of connective tissue intermixed with numerous elastic fibrillæ, derived from the endocardium. These transverse cords may be considered as giving additional strength to the cardiac muscles, to increase their resistance during diastole, and their power of contraction during systole.

The further researches of Paladino lead him to the following physiological results:

1. The auriculo-ventricular valves are contractile; their contraction in the first instance being a continuation of the contraction of the auricles, and in the second instance a continuation of the contraction of the ventricles.

2. The contraction of the auriculo-ventricular valves acts, by means of the chordæ tendineæ, upon the papillary muscles and upon the ventricular wall.

3. The transverse muscular cords which traverse the ventricular cavity contract synchronously with the systole of the ventricle.

In conclusion, Paladino refers to the mechanism of the valves, and considers therein three chief factors:

a. Contraction of the valvular muscles, derived from the auricle, which shorten and elevate the valves, and at the same time separate them from the ventricular wall and suspend them freely into the ventricular cavity.

b. Pressure by the blood-wave of the valves upwards, effecting complete closure of the ostium.

c. Contraction of the valvular muscular fibres derived from the ventricle. This latter contraction accompanies the commencement of the ventricular systole, and increases the valvular tension; whilst during the auricular diastole the valvular muscles derived from the auricles are in a state of relaxation.

The first two factors being sufficient to completely close the ostium, and the third only serving to intensify the action of the first two factors, it is evident that the closure of the ostium must precede the beginning of the ventricular systole.—("Lo Sperimentale," January, 1877, p. 14; Annali Universali di Medicina, May, 1877, p. 437; "Medizinische Neuigkeiten Erlangen," May, 1877, p. 155.)

Cardiac Muscular Action.—Dr. Chirone opposes the opinion of Mosso and Pagliano, who maintain that the activity of the cardiac diastole is due to the elasticity of the heart, and not to the active expansion of the muscular fibres. Dr. Chirone's experiments lead him to the following results:

1. Every fibre consists of ovoid particles, which change their relative position during a contraction or expansion. He explains this by three diagrams:

a. Showing muscular fibre at rest, ovoid bodies parallel and slightly oblique.

b. Muscular fibre in a state of contraction, the ovoid bodies parallel and vertical.

c. Muscular fibre in a state of expansion, ovoid bodies parallel and more obliquely inclined.

2. There are two sets of final nerves in each muscular fibre; the one brings the ovoid bodies into a vertical position, the muscle becoming shorter and thicker; the other set of nerves brings the ovoid bodies into a more oblique position, the muscle becoming elongated and thinner.

3. During systole the first set of contractile nerves produces a vertical rotation in the ovoid bodies; and during diastole the second set of extensile nerves produces a more oblique rotation in the ovoid bodies; hence the double muscular action in the heart; the cardiac muscle being active in diastole as well as in systole.—("Rivista Clinica di Bologna," Sept. and Oct., 1876, pp. 291—309.)

Lymphatics in the Human Pleura.—Dr. Bizzozero ("Gazzetta delle Cliniche," Jan., 1877) in 1876 discovered in the human serous membrane a thin membrane next to, and easily to be separated from, the adjoining epithelium. He has since observed, in the diaphragmatic and parietal pleura, this membrana limitans perforated, and the lymphatics communicating with the pleural cavity through the apertures. He found the same to be the case with the lymphatics of the peritoneum. This discovery is of great importance, as it settles the question as to the mode of communication between the lymphatics and the cavities of the serous membranes, there being between them only a partition consisting of a layer of epithelial cells.—("Il Morgagni, Napoli," Feb. and March, 1877, p. 243.)

Action of some Alkaloids upon the Heart.—Professor C. Peyrani communicates (Medical Congress of Turin, Physiol. Section), some experiments made in his laboratory at Parma, with the object of ascertaining the action of certain alkaloids upon the heart, respiration and temperature. The animals experimented upon were frogs and rabbits. To ascertain the temperature a thermometer was placed in the mouth of the frog and in the rectum of the rabbit. A small aperture was made in the thorax of the frog, and the heartbeats could be easily counted before, during, and after the experiment; in the case of the rabbits a needle was introduced through the thoracic walls into the heart, and another into the lung. Placing the animals in a convenient position to keep them immovable, in half-an-hour the temperature, cardiac pulse, and respiration were registered. Then 3½ cubic centimetres of a watery solution (1 in 30) of an alkaloid was hypodermically injected into the skin of the abdomen, and notes taken every 15, 30, 45, and 60 minutes after the injection was effected. The alkaloids used for injection were: digitaline, nicotine, cantharidine, codeine, piperine, conieine, solanine, narcotine, and cinchonine.

1. *Digitaline.* (*a*) Frog—temperature increased 1½ degrees; heartbeats diminished from 19 to 4 per minute. (*b*) Rabbit—temperature, diminished one degree; heartbeats diminished from 140 to 73 per minute; respiration increased from 60 to 70 per minute.

2. *Nicotine.* (*a*) Frog—temperature increased 1 degree; heartbeats diminished from 18 to 9, and rose again to 14. (*b*) Rabbit—temperature decreased 1·7 degree; heart-beats fell from 182 to 106 per minute; respiration rose from 50 to 64.

3. *Cantharidine.* (*a*) Frog—temperature increased 1½ degree; heartbeats increased from 12 to 25 per minute. (*b*) Rabbit—temperature fell 3 degrees; heart-beats rose from 124 to 200, and then fell to 162 per minute; respiration fell from 90 to 57 per minute.

4. *Codeine.* (*a*) Frog—temperature rose 1 degree; heart-beats went from 16 to 10, and up to 12 per minute. (*b*) Rabbit—temperature

rose 1½ degrees; heart-beats fell from 140 to 116 per minute; respiration fell from 57 to 48 per minute.

5. *Piperine.* (*a*) Frog—temperature not affected; heart-beats went from 27 to 34, and down to 30 per minute. (*b*) Rabbit—temperature not affected; heart-beats went up from 142 to 198 per minute; respiration rose from 90 to 97 per minute.

The injection with conieine, solanine, narcotine, and cinchonine had scarcely any effect.—("Lo Sperimentale," Jan., 1877, pp. 107-112.)

Action of Quinine in Cardiac Affections.—Dr. G. A. Mercurio relates five cases of heart affections, in all of which the chief features were ventricular hypertrophy, with or without aortic valvular disease, œdema of the lower extremities, palpitatio cordis, and difficult breathing. Digitalis and other remedies having been tried without giving relief, Dr. Mercurio prescribed quinine (gr. 8 to 16 pro die), and in a few days obtained a great amelioration of all the symptoms; the heart-beats became more regular and less violent, and the breathing greatly eased; the œdema disappeared entirely.

Dr. Mercurio explains the beneficial action of quinine by stating that in hypertrophy of the left ventricle, during each systole the blood is thrown forward with undue force, hence the increased blood-pressure in the vessels; quinine has the property of lowering the force of the cardiac contractions, and diminishing the impulse of the heart by its action upon both the cerebro-spinal and the sympathetic nervous systems; by lowering the systolic force, the blood-circulation becomes much slower; and by regulating the blood-circulation all other organic functions get regulated likewise, the kidneys filter more water; and thus quinine acts also as a diuretic remedy and favors the disappearance of œdema.—("Gazzetta Medica di Roma," Jan. and Feb., 1877, pp. 9, 10 and 44, 45.)

Action of Quinine upon the Circulation.—Professor A. Mosso, having verified the experiments made by Stienon on the physiological action of quinine upon the circulation, arrives at the following conclusions:—

1. Quinine has the effect of moderating the circulation.

2. The cardio-vascular action of quinine is powerful, and appears to act through the nerves.

3. Action upon the Heart: (*a*) Changes the rhythm which, according to the dose, may be accelerated or retarded. (*b*) A constant diminution in the power of the heart-beats, whatever may be the dose; this enfeeblement of the cardiac contraction depends upon the action of the drug through the intra-cardiac ganglia and not through the ends of the pneumogastric nerves.

4. Action upon the Vessels: (*a*) Vascular contraction; (*b*) Relaxation of the vessels. These two phenomena depend on an increase and subsequent depression of the activity of the vaso-motor centres;

(*c*) Altogether the effect is a progressive diminution in the arterial tension.—("Giornale della Accademia di Medicina di Torino," Feb. 20th, 1877, pp. 130-133.)

Effect of Compressed Air upon the Circulation.—Dr. Mosso communicates to the Royal Academy of Medicine of Turin some results obtained with his modified sphygmograph. He found that when a patient was exposed to the pressure of two atmospheres, the pulsation in the radial artery greatly diminished, and nearly stopped; the curved lines traced by the sphygmograph gradually became less, and nearly approached a horizontal line.

This effect he does not attribute to the mechanical action of the compressed air, but to the changes produced thereby in the function of the heart and blood-vessels. This opinion he corroborates by the observation that the diminution in the pulsation persisted awhile after normal pressure took the place of doubled atmospheric pressure.—("Giorn. della Accad. di Med. di Torino," May 10th and 20th, 1877, pp. 390-395.)

Comparative Experiments with the Respiration of Oxygen and that of Air (by G. P.).—("Annali di Chimia del Polli," Feb., 1877.)

Exp. 1. A glass bottle, of the capacity of one litre, was filled with oxygen, and well covered by a perforated cork, through which was passed a kindled wax taper, attached to an iron lid firmly closing the bottle over the cork. The flame at first became much brighter, but subsequently went duller, and finally became extinguished 75 minutes after its introduction into the bottle.

Exp. 2. A similar bottle, filled with air, allowed the taper only 23 minutes to burn.

Exp. 3. A similar bottle, filled with water, and placed upside down over a hydro-pneumatic bath, was entirely filled with air expired by a healthy thorax; by reversing the bottle and introducing the burning taper as before, the flame was extinguished at once.

Exp. 4. By inhaling oxygen and breathing into the bottle till it became filled in the same way as in *Exp.* 3, the kindled taper continued to burn for 30-35 minutes.

Remarks.—Comparing *Exp.* 1 and 4, we find that the flame continued to burn in pure oxygen nearly twice the time it did in air expired after inhalation of the oxygen. Does this prove that the inhalation of pure oxygen increases the absorptive power of the lungs for that gas, or that it is indifferent to the respiration, whatever quantity of oxygen may be inhaled, as only a certain quantity of oxygen, in proportion to that contained in the inspired air, will be taken up by the lungs?

The next experiments show that more oxygen will be absorbed by the lungs, if the proportion of the inhaled gas becomes increased.

Exp. 5. In normal breathing, 14 respirations per minute, the expired air immediately extinguished the flame.

Exp. 6. By making 20 respirations per minute, the expired air supports the flame 9 minutes.

Exp. 7. 30 respirations—flame supported in the expired air 15 minutes.

Exp. 8. 40 respirations—result, 19 minutes' burning of flame.

Exp. 9. By making the greatest possible number of respirations, the expired air supports the flame 23 minutes.

Exp. 10. By breathing in pure oxygen very rapidly, the expired air maintained the burning taper for 50 minutes.

Exp. 11. By breathing in pure oxygen very slowly, the expired air rapidly extinguished the flame.—("Lo Sperimentale," April, 1877, pp. 458-460.)

DIAGNOSTICS.

New Portable Laryngoscope (by Dr. C. Labus).—The want of a laryngoscope for all practical purposes, and one to be ready at hand in any emergency, induced Dr. Labus to construct a very simple and convenient apparatus. This new laryngoscope has for its object:—

1. The increase of the power of any luminous body, by carrying back to the same all the rays otherwise dispersed and lost.
2. The collection of the largest number of rays emanating from the reinforced flame.
3. The prevention of all sources of diminution of the intensity of the illumination.
4. To place the observer under the most convenient conditions with regard to his faculty of vision.

Any kind of light-giving apparatus, even the most simple lamp, may be used, provided it has a circular flame, opposite to which is placed a concave mirror of such a curvature and amplitude, and so placed as to have the flame in the centre of its curvature. The reflector consists of a conical mirror, provided with two apertures at such a distance as to correspond with the two eyes of the observer; the eyes being shaded by the mirror, which collects and reflects all the rays upon the laryngeal plane mirror introduced into the patient's throat. The concave mirror which is put over the flame is surrounded by a sheath, to which is attached an opaque and bad heat-conducting shade, to protect the patient from the light and heat of the lamp. The lamp when ready for use may be held by any person over the patient's shoulder, or can be placed near the edge of a table.—("Lo Sperimentale," May, 1877, pp. 577-579.)

Transmission of Soundless Voice through Pleuritic Effusions.—Dr. L. C. reports two cases of pleurisy, which corroborate the views of Professor Baccelli as to the diagnostic importance of the transmission of sounds through pleuritic effusions.*

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* See "Dobell's Reports," Vol. II., 1876; "Report on Italy," by A. Wahltuch, M.D., pp. 143, 144.

1. A married woman, aged 37, was admitted into the hospital with an effusion, filling completely the right pleural cavity and half of the left pleural cavity, with slight hydro-pericardium and œdema of the breasts and right leg. The soundless voice could distinctly be heard through the thoracic walls, and consequently a serous effusion was diagnosed. By thoracentesis 2,500 grammes of serous, slightly purulent, liquid were withdrawn. The patient felt immediate relief, but in a few days began to suffer from difficult breathing. On examination the soundless voice could be heard anteriorly and posteriorly in the superior right thoracic region, but was indistinct in the lower parts, especially anteriorly. Thoracentesis was performed higher than before, with the same result of withdrawing 1,800 grammes of sero-purulent liquid. Later on the operation had to be repeated a third time, anteriorly and corresponding to the parts which indistinctly transmitted the voice; and 750 grammes of fibro-purulent liquid were this time withdrawn. On the following day the patient died, and the necropsy confirmed the diagnosis made during life.

2. A woman, aged 27, admitted with right pleuritic effusion; sounds were transmitted distinctly; on thoracentesis being performed a purely serous liquid was withdrawn, and the patient made a speedy and good recovery.

Dr. L. C. remarks that these two cases confirm the opinion of Professor Baccelli that in pleuritic effusions sounds are transmitted in inverse ratio to the density of the liquid.—("Gazzetta Medica di Roma," 15th Dec., 1876, pp. 305, 306.)

Syphilitic Affection of the Lungs.—Dr. Pentimalli ("Movimento Med. Chirurgico," Feb., 1877), having made exact observations in pulmonary syphilis, is of opinion that the symptoms of congenital and of acquired syphilitic affection of the lungs, are very much the same; and if the pulmonary lesions are not extensive, it is very difficult to distinguish syphilitic from non-syphilitic pulmonary affections; the diagnosis in the latter instance is greatly aided by observing the following facts as characteristic of syphilitic disease:—

1. Absence of heredity, of a phthisical habitus, and of preceding pulmonary or pleural affections.
2. Seat of lesion: never the apex, and always limited to a certain part on one side and behind.
3. Slowness in development.
4. Rarity of hæmoptysis.
5. Absence of febrile symptoms.
6. Anamnesis—the past history of the patient.
7. Presence of syphilitic affection in the other organs.
8. Failure of ordinary treatment, and good effects of a specific treatment.—("Il Morgagni, Napoli," April and May, 1877, p. 393.)

ETIOLOGY.

Pulmonary Phthisis—its Causes and the Importance of Hæmoptysis—a Statistical Study.—From observations made upon 238 patients with pulmonary phthisis, treated in the Ospedale Maggiore di Bologna, in the years 1874 and 1875, Dr. Mazzotti derives the following conclusions :—

1. Phthisis at Bologna is more frequent in the poor than in other classes of society.

2. Phthisis is more frequent in women than in men, in proportion of three to two.

3. In women phthisis occurs chiefly between 20 and 30 years of age, whilst in men it prevails generally in youth, but also occurs at all ages.

4. Amongst the working classes, phthisis develops generally in such as have to exercise the thorax in forced positions.

5. The chief causes of phthisis may be considered to be:—
   - *a.* Heredity.
   - *b.* Repeated acute inflammatory affections of the respiratory organs (bronchitis, pleurisy, pneumonia).
   - *c.* Diseases that enfeeble the constitution of the individual (scrofula, syphilis, chlorosis, anæmia).
   - *d.* In fewer cases : bad formation of the thorax ; affection of the orifice of the pulmonary artery ; military life in tender persons ; physical and moral troubles in prisons ; excesses of all sorts ; a vicious atmosphere.
   - *e.* In women, early marriage and frequent gestation.

6. No case of phthisis could be traced as having been produced by contagion.

7. Hæmoptysis cannot be considered as a direct cause of phthisis, but by weakening the constitution may predispose to consumption. Hæmoptysis may happen in any stage of the disease, from the first beginning to the last few days before death. Hæmoptysis always aggravates the disease.—("Rivista Clinica di Bologna," Feb., 1877, pp. 48-57.)

PATHOLOGY.

Diphtheria.—The "Vienna Medical Year-book," 1876, p. 207, contains a contribution to the morbid anatomy of diphtheria by Dr. G. Bizzozero. At a time of epidemic diphtheria in Milan, Dr. Bizzozero examined the spleen and the glands of the intestines and mesentery in children who succumbed to the disease. He found in the spleens, which appeared to the naked eye unchanged in size, the venous net of the pulp over-filled with red blood-corpuscles. The Malpighian bodies contained in their centres foci with a few unchanged cells, a large number of fine fatty granules, numerous albuminoid granules, soluble in acetic acid, and large cells with nuclei. The protoplasm of these cells, besides fatty and albuminoid granules, contained also more or less of small nuclei, red blood-corpuscles, or yellowish and granular pigment.

Dr. Bizzozero found similar foci in the follicular glands of the intestines, and in the mesenteric glands. He considers these multinuclear cells as derived from contractile cells with the admixture of degenerated follicular cells. Such foci are constantly found in diphtheria, and Bizzozero considers the lymphatic organs as the chief seat of the tissue-change occasioned by diphtheria. The solitary follicles are the first attacked; wherever diphtheritic inflammation developes in such places as the tonsils, the fauces, the larynx, or the submaxillary glands, these solitary follicles are at first destroyed and form a detritus, whilst the tissue remains intact.—("Medizinische Neuigkeiten," Erlangen, 21st October, 1876, p. 339.)

Tuberculosis.—Dr. P. Foa ("Archivio per le Science Mediche Torino," 1876) considers the structure, origin, and anatomical and clinical importance of tubercles; the dualism of phthisis; local tuberculosis; and the inoculability of tubercle.

Dr. Foa thinks that tubercle has but an anatomical value, as it never presents a clinical unity, but merely a histological unity. A tubercle is a neoplasm based upon connective tissue, the elementary form of which is a nodule deprived of vessels and constituted of a circumscribed accumulation of white globules or of epithelial cells, or of both, with one or more giant-cells, variable in position and shape, with or without the presence of a net-work which may be occasioned by cellular prolongations or by the inter-cellular substance of the organ in which the tubercle becomes developed. The tubercle is characterized by an origin of irritation, by incomplete organisation, and by a rapid disintegration of its elementary parts.

The giant-cell, which may vary according to its relation to the surrounding elements; the presence of epithelioid cells with or without white corpuscles; the presence or absence of the network; neither confirm nor deny the existence of tubercle. To do that, or to recognise what Foa calls the histological unity of tubercle, it would suffice to have a giant-cell variable in form and position, but which is held in a certain determined relation, be it even solely, to the white corpuscles; but a cell which is variable in shape and position might also be of special tubercular nature, if held in a certain determined *rapport* as above mentioned; and therefore the giant-cell may be absent; as he believes it has not yet been proved that tubercles may exist without giant-cells.

Foa further thinks that the tubercular process is only an accidental or secondary occurrence, as the tubercle may vary according to the tissue in which it develops. He therefore denies the existence of a second kind of pulmonary phthisis, and what is generally termed so is, he says, essentially a caseous broncho-pneumonia in which a tubercle has only the value of a local and secondary product, whether in diffuse or in local tuberculosis.

Foa does not consider the tubercle to be a specific neoplasm, as is the case with cancer or sarcoma, his observations having proved it never to be transmitted by inoculation.—("Annali Universali di Medicina," Milano, Oct., 1876, pp. 318-320.)

Giant-Cells—Dr. Colomiatti ("Gazzetta del Cliniche di Torino," 1876,) concludes, from his experimental researches that:

1. Giant-cells are found not only in the pathological, but also in the normal tissues, such as the marrow of the bones, dental tissue, etc.
2. Giant-cells may be of epithelial or connective origin; in the first instance they are derived from the epithelium covering the alveoli in cancer, or the alveoli in the lungs, or the Meibomian glands, etc.; and in the second place, they are derived from the cells of the connective tissue; and in all the cases observed, the formation of giant-cells is due to an enlargement of single cells, and to a fusion of several cells into a large one.
3. The infective principle of tubercles is a non-organised substance, which may be considered as freely suspended in the liquids surrounding the so-called tubercular elements; as tubercular nodules can be produced by subcutaneous injection of distilled water that has contained tubercular matter, although the water has been filtered before the injection.
4. This tubercular principle acts in the following manner:—Irritation of the parts that come in contact with the introduced matter; therein are seen a movement of cells which undergo a progressive change and gradually increase (from a round cell, richer in protoplasm than others, to an epithelioid cell with one or two nuclei) to become giant-cells.
5. Giant-cells may result from the abnormal development of a single young connective cell.
6. Every giant-cell may be considered as a cell in a state of proliferation, but in which the latter had been arrested at a period of multiplication of nuclei with augmentation of protoplasm.
7. The tubercular nodules studied by Colomiatti were those produced by subcutaneous injections, and the examination of the lymphatic glands in the neighbourhood confirmed the view held by him, that secondary tuberculosis is only possible through the transport of tubercular elements, in the sense of elements which carry the infective principle—as he found in the lymph-sinus of the glands epithelioid cells, which must have been transported from primitive subcutaneous nodules by way of the lymphatic vessels.—("Annali Universali di Med.," Oct., 1876, pp. 304-306.)

Endothelial Cells.—Dr. Salvioli ("Giorn. della Accad. Med. di Torino," 1876,) describes a special change in the epithelial cell as observed by him in the human pleura and peritoneum, and also in the pericardium of a dog. He noticed the various changes of the cell in the cellular protoplasm, which consist in the cell at first being filled with a shining and fluid substance, and getting coloured with hæmatoxiline, then a gradual disappearance of the adjoining protoplasm, and rupture of the cellular vesicle, which entirely vanishes. He found the above cystic degeneration of the epithelial cells in the parietal pleura of two persons, who died from chronic pleurisy with and without pleural effusion, and also in two aged persons who died from marasmus.—("Ann. Universali di Med.," Oct., 1876, p. 311.)

CLINICAL MEDICINE AND SURGERY.

Enlarged Thymus Gland.—Dr. Brigidi ("Comment. Clin. di Pisa," Feb., 1876,) reports the case of a large thymus gland being found in a person who died from phthisis. The length of the gland was 335 millimetres, the width in the middle lobe was 66 mm., in the left lobe 70 mm., and in the right lobe 54 mm. The weight, after a few days' immersion in alcohol, was 190 grammes. The microscopic examination demonstrated it to be a mixo-lipomatous degeneration of the thymus gland. As to diagnosis during life, there was dulness on percussion, and absence of auscultatory signs.—("Il Morgagni, Napoli," April and May, 1877, p. 395.)

Pneumonia.—In a clinical lecture, delivered by Professor Carlo Ghinozzi, on four cases of pneumonia treated in his hospital at Florence, he makes the following remarks:—

The clinical observations and experimental researches made with respect to external inflammations, leave no doubt whatever that the initial symptoms are: a great afflux of blood to the parts affected; with a sanguinary current, at first accelerated, then awhile oscillating, and lastly retarded; and especially a transition of leucocytes through the capillary walls; this retardation is then followed by stasis, engorgement, a transition of serum and red blood corpuscles through the vessels, a rupture of the latter, and an escape of albumen, fibrine, and other morphologic elements from the blood—a phlogistic exudation thus being formed. With the first afflux of blood occur a cellular proliferation in the tissues and hyperplasia of blood; these are secondary and successive to the hyperemia, or fluxion; but the further changes, such as stasis, congestion, exudation, and the transformation of the latter, manifest a chemico-organic vital action which may be considered the most important fundamental process of an inflammation. Here we have no more a proliferation or hyperplasia, in a physiological sense, but a pathological hypo-morphism and hypoplasia, and consequently the pyoid and fatty degeneration of the elements derived from the blood and the tissues, and also a new formation of hetero-plastic and hetero-chemical degeneration, which is pus—the latter never pre-existing in normal tissue, but always being found at the seat of inflammation. The transposition and migration of morphological elements cannot be denied; but such amœboid movement can only be considered as limited and restricted by the stasis and infarction of all the fluids, and the tendency of the inflammatory process not to extend but to concentrate, and likewise to isolate its chemico-organic action.

Referring to the four cases of pneumonia under clinical observation, Professor Ghinozzi remarks that the symptoms were almost alike in all these cases; they all commenced with congestion, and the fever, the pulse, the temperature, the secretion of the kidneys and of the skin, did not differ much; no determined cycle of symptoms was noticed in any of the patients.

As to treatment, venæ-section was performed in one case, and although the symptoms improved, yet the course of the disease was much protracted. In the beginning, the antiphlogistic treatment was tried locally, cold compresses, or ice-bags, were applied for 10 to 12 minutes at a time (continuous cold applications are found to act injuriously); cold beverages, carbonate and chlorate of potash, later chloride of ammonium or other expectorants; subsequently diuresis was encouraged by copious drinks and acetate of potash; during convalescence nourishing diet and tonics were given.—("Lo Sper.," Jan., 1877, pp. 29-39.

Influence of Hæmoptysis in the Development of Phthisis.—Dr. Annelli ("Gazzetta Medica Italiana-Lombardia," Feb. 1877) states that the development of phthisis after hæmoptysis is neither due to the irritant action of the blood entering the bronchi, nor to the action of the air upon the effused blood, but to the entrance of infected matter into the pulmonary tissue which has become looser in its continuity by the hæmorrhagic matter, provided there pre-existed broncho-pneumonic foci in a latent state. Dr. Annelli therefore concludes that in hæmoptysis not only hæmostatic but also antiseptic treatment should be adopted.—("Il Morg., Napoli," April and May, 1877, p. 405.)

Pleurisy with Fibrinous Effusion.—Dr. Arrigo Maroni publishes two cases on which he makes some important diagnostic observations, and adds some remarks as to prognosis and treatment.

1. Pleurisy with fibrinous exudation has its own complex signs by which it can easily be distinguished from other inflammations of the pleura.

2. These pathognomic features of fibrinous pleurisy might easily be mistaken for those of pneumonia, as they have some symptoms in common, such as the rapid course, the febrile nature, and the physical signs; but they can be distinguished from pneumonia as regards the

absence or scarcity of expectoration, and the violence, persistence, and extent of the thoracic pain.

3. As to prognosis; the cases are grave—

a. If the temperature continues high, especially in weak persons.

b. If the fibrinous exudation assumes a tendency to purulent degeneration.

4. As to treatment; antipyretics, especially digitalis, should be administered to reduce the fever, but in case of failing of the heart's action, stimulants should be freely given. The violent pains, being the principal cause of difficult breathing and incomplete oxydation of the blood, must be relieved by local cold fomentations, or moist heat and local depletion.—("Riv. Clin. di Bologna," Sept.-Oct., 1876, pp. 273-280.)

Pyo-thorax.—Dr. Serra reports ("Raccogliatore Medico," Feb., 1877) a case of pyo-thorax successfully cured by thoracentesis. The operation was performed by Dr. Urbinati, and eleven hundred cubic centimetres of yellowish liquid were withdrawn. Immediately after the operation a solution of iodine tincture was injected, and such injection repeated until the patient completely recovered.—("Il Morgagni, Napoli," April and May, 1877, p. 406.)

Pleuritic Effusion treated successfully by Compression of the healthy side of the Thorax.—Dr. Sante Albertazzi, of Florence, publishes an additional case of pleurisy treated successfully by manual compression of the healthy side of the thorax.*

The patient, aged 20, a carter, was admitted into the hospital with pleurisy and large sero-fibrinous effusion of the left side; temperature 39·1° Cels., pulse 96, respiration 28. The febrile symptoms were at first treated with quinine and Dover's powder, and subsided on the fourth day, when it was decided to commence with the manual compression. This was performed daily at first for ten minutes, and then for fifteen minutes at a time. The patient soon felt great relief, the effusion gradually diminished, and became completely absorbed on the fourteenth day of treatment by compression. He then was dismissed quite cured, and soon resumed his ordinary occupation.

Dr. Albertazzi claims for this method of treatment as recommended by Dr. Concato the following advantages:

1. It takes the place of thoracentesis, or the treatment by resolvents, and is safer and more effectual than either of them.

2. The short time required for the manual compression in no case inconveniences the patient, and being controlled by the hands of the operator, the pressure may be modified according to circumstances.

3. No medicines are required, and the treatment is only assisted by

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* For previous cases, see "Dobell's Reports," Vol. II., 1876. Report on Italy by A. Wahltuch, M.D., pp. 149, 150.

appropriate nourishing diet.—("Riv. Clin. di Bologna," Sept.-Oct., 1876, pp. 289-291.)

Cutaneous Emphysema in consequence of the opening of a Pulmonary Cavern into the Intercostal Space.—Dr. G. Galli, of Piacenza, records the case of a country girl, aged 17, admitted into the hospital December 22nd, 1875.

Previous history: Parents alive and healthy. When 14 first menstruated, and since that time subject to repeated winter coughs, and a few months before her admission into the hospital suffered from ague, which abated after a few doses of quinine. But since the ague she has had a persistent cough, with alternative scanty and difficult, or profuse and free expectoration, and in the evening suffers from regular chills, followed by great heat and profuse perspiration.

Present condition: Middle stature, pale complexion, muscles, adipose tissue, and skeleton well developed. Temperature 39·1° Cels., pulse 86, respiration 24, troublesome cough. Thorax well developed, right supra and infra-clavicular fossæ abnormally marked; expansion in right side of chest somewhat diminished; auscultation and percussion give all signs of a large cavern in the anterior part of the upper lobe of the right lung between the second and fourth ribs.

The treatment with quinine and Dover's powder, and later on decoction of cinchona with decoction of lichen islandicus and opium, gradually improved all the symptoms; the cough was slight, and she could leave the bed. On the 22nd of January, 1876, she suddenly had a feverish attack, which continued and increased daily in intensity, and resisted all anti-pyretic means. She also complained of pains in the chest, and on examination an emphysematous swelling in the subcutaneous tissue was detected on the spot corresponding with the seat of the pulmonary affection. This swelling rapidly spread all over the chest, neck, face, and arms, and the patient died on January 31st, or six days after the passage of air from the lungs into the cellular tissue of the skin.

Necropsy thirty-six hours after death: Emphysematous swelling of the skin all over the body; skin of anterior right thoracic wall dark-greenish colour, pectoral muscles blackish, brittle, infiltrated with fetid, cheesy, and purulent matter; in the third intercostal space a large aperture, and in the same place necrotic destruction of the third and fourth ribs, about 1½ inches from their sternal articulation. The aperture further led into a superficial pulmonary cavity, the intermediate two pleural membranes firmly adherent, which explains the absence of pneumo-thorax. The right lung contained but little air, and the apex was slightly indurated. The left lung healthy; but numerous adhesions existed between the chest-organs and the thoracic walls. Liver somewhat fatty; spleen slightly enlarged; heart, kidneys, and intestines healthy.

Dr. Galli considers this case interesting as offering a new mode of origin of cutaneous emphysema in chest affections, viz., adhesions between the two pleural laminæ, resulting from preceding inflammations of the pleura; formation of a superficial pulmonary cavity corresponding with the spot of such pre-existing adhesions; opening of the pulmonary cavity superficially; ulceration of both pleuræ through the adherent parts; emptying of the caveral discharge into the intercostal spaces, and through these the passage of the inspired air into the subcutaneous cellular tissue.—("Riv. Clin. di Bologna," Aug., 1876, pp. 236-238.)

Mediastino-Pericarditis Caseosa. — Dr. P. Cantilena, of Belluno ("Giorn. Veneto delle Scienze Mediche," April, 1877), makes some observations on this very rare affection of mediastino-pericarditis, which is always preceded by acute rheumatism, pleurisy, or pleuro-pneumonia. The pericarditis assumes the form of fibro-pericarditis, as the inflammatory process is not limited by the serous membrane of the pericardium, but extends to the fibrous membrane, and also to the connective tissue of the mediastinum all along the pericardium to the aortic arch. The symptoms, in the beginning, are the usual signs of pericarditis; but soon are added new symptoms consequent upon the organisation and retraction of the connective membrane. Of the special symptoms, the change in the pulse may be considered the chief. During deep inspiration the pulse becomes small and irregular, and dwindles away, owing to the dilatation of the thorax and elevation of the sternum; the adhesions formed between the latter and the pericardium acting in such a way upon the aorta as more or less completely to obliterate the lumen of the vessel. Such a pulse was termed "pulsus paradoxus of Kussmaul." The veins of the neck are enlarged, as in cases of ordinary pericarditis, but in the later stage, when the adhesive fibres in the mediastinum begin to retract, the veins of the neck are more swollen during each inspiratory uplifting of the sternum, which is just the reverse under normal conditions. Another important sign is œdema of the face and neck.

Dr. Cantilena also gives a short description of a case in which the above-mentioned symptoms were sufficiently marked to justify a correct diagnosis during life. The necropsy in this case confirmed the diagnosis, and the sternum was so firmly adherent to the connective neoplasm in the mediastinum, that considerable force had to be applied in its removal.—("Ann. Universali di Med. Milano," May, 1877, p. 389.)

Arterio-Venous Aneurism of the Left Carotid and the Jugular Vein.— Dr. C. Mazzoni ("Clinica Chirurgica, Roma," 1876) relates the case of a man, aged 24, of strong and healthy constitution, who a month previous to his admission received in the anterior left side of the neck a cut wound, which soon healed by the first intention. In the situation of the wound a bellows sound could soon be perceived, which gradually became louder, and began to disturb the patient's rest and sleep.

Local examination: In the left lateral region of the neck, near the anterior margin of the sterno-cleido-mastoid muscle there was a transversal and slightly oblique cicatrix of about 3 centim. length. This cicatrix formed the summit of a slightly fluctuating swelling, and by placing the hand upon it, pulsation and fremitus, isochronous with the cardiac beats could be perceived. The stethoscope revealed a strong bellows souffle in the cicatrix, in the ramifications of the carotid artery, and in the apex of the heart. By pressing with the finger upon the carotid, between the heart and the cicatrix, the souffle subsided, but the swelling became more marked.

The diagnosis was that of an arterio-venous aneurism, caused by an immediate communication between the carotid and the jugular vein. Persistent digital compression of the carotid during three days and nights gave no favourable result, and the swelling thereby considerably increased. An operation was consequently decided upon, namely, the double ligature of Malgaigne. A dissection was made between the aneurismal sac and the tissues of the cicatrix, and the ligature applied to the carotid above and below the tumour. All went on well till the tenth day, when the ligature came off; two days after this a considerable hæmorrhage occurred, which was arrested by hæmostatic cotton. Septic fever appeared, and two days later there was repeated hæmorrhage, for which the wound had to be re-opened and a ligature applied to the superior thyroid artery, from which the bleeding originated. The patient became very anæmic, and transfusion of seventy grammes of defibrinated blood was made, after which the patient appeared relieved, but next day he suddenly died.

Necropsy: Œdema of the pia mater, effusion in the pleural cavity, multiple metastatic abscesses in the lungs, liver, and spleen; the kidneys anæmic, flaccid, and in a state of granular degeneration and passive enlargement.—(Virchow). The site of the operation presented a deep gangrenous ulceration; the internal jugular vein was destroyed by suppuration, and in its more distant parts was found a thrombus in a state of softening; the carotid was cut where the ligatures had been applied. The aneurismal sac was filled with pus and blood, perforated in its external wall, probably in the spot which communicated with the jugular vein; the lower part of the carotid was obstructed by a thrombus, two-thirds of which were firmly adherent to the wall, and appeared softened and infiltrated with pus; the upper part, close to its division into internal and external branches, was not occluded by any thrombus, but its opposed walls were adherent. The internal carotid was unaltered, the external carotid ulcerated and filled with pus and blood. There were no infiltrations in the vicinity of the wound.—(" Annali Universali di Medicina," April, 1877, pp. 343, 344.)

Embolism of the Pulmonary Artery in consequence of Elastic Compression of both Lower Extremities.—Dr. Massari (" Gazzetta Medica Italiana," March 17th, 1877), points out a serious inconvenience in the methodical compression of the extremities by the elastic bandages; and mentions the case of a pregnant lady who became very anæmic from considerable losses of blood occasioned by a placenta prævia. To arrest the hæmorrhage the plan of Dr. Müller was adopted, and an elastic bandage applied to compress both legs, after which the anæmic condition markedly changed for the better; but soon, owing to local pains, the elastic bandages had to be temporarily removed, and on re-application of the pressure it was well borne for 32 hours after the child's birth, when the patient suddenly collapsed, had difficulty in breathing, and palpitation of the heart; the immediate removal of the elastic bands gave no relief whatever, and the patient died in two hours. Post-mortem, large clots were found in the pulmonary artery. Dr. Massari therefore counsels caution in a prolonged application of the elastic bands in all cases.—(" Annali Universali di Medicina, Milano," May, 1877.)

Aortic Aneurism, accompanied by Symptoms of Cheyne-Stoke's Respiration. — Professor P. Sacchi describes, very minutely, a case of aneurism of the ascending aorta with very complicated cardiac symptoms, a true diagnosis of which, although presenting some difficulty, yet was correctly made by Professors Murri and Sacchi during life, and confirmed post mortem. The patient presented, a few days after admission, symptoms of Cheyne-Stoke's respiration, which consisted in a complete suspension of breathing during two minutes, followed by respiratory action of equal duration, at first superficial, then gradually getting deeper and dyspnœic; subsequently the breathing was less frequent, and again became suspended for a couple of minutes; then succeeded an irregular respiratory action, as described above. Professor P. Sacchi states that with oxygen inhalations he could each time arrest the apnœa, and thinks that this circumstance is opposed to the theories of Traube and Filehne, the first ascribing these phenomena to a sudden lowering of the excitability in the respiratory centre by a diminished arterial irrigation of the medulla oblongata; and Filehne maintaining that the excitability of the respiratory centre must be depressed much below that of the vaso-motor centres.—(" Riv. Clin. di Bologna," Feb., 1877, pp. 33-47.)

Double Cardiac Impulse and Double Venous Pulse. — " A Clinical Observation," by Dr. C. Bozzolo, of Turin (Pamphlet).

The subject of clinical observation was a countryman, aged 31; he had acute articular rheumatism when 7 years old, and in 1866 underwent the fatigues of the campaign. Three years ago he began to have frequent pains in the cardiac region, and during a two years' treatment with digitalis and iron, felt ameliorated; but persistent shortness of breath, for which he was frequently bled, at last forced him to enter the Clinical Hospital.

State on admission: The patient is meagre, œdematous in the thighs and back, cyanotic in the face, ears and tongue; the pupil slightly dilated in deep inspiration; the neck is short and thick; and the veins, both superficial and deep, pulsate, and the pulsation extends to the facial veins in such a manner that each second dilatation of the vessels is followed by a contraction of longer duration than that which takes place between the two dilatations. During a compression of the jugular vein in the middle of its inferior portion, the pulsation persists, although it becomes less in the upper portion. On auscultation there is a souffle synchronous with each pulsation (76 per minute); the dilatation of the vein is synchronous with that of the carotids; but whilst in the jugular vein *two* near pulsations of almost equal intensity can be noticed, in the carotid one strong beat can be heard, followed by another less distinct and apparently coming from the vein of the neck. The thorax is broad, the cardiac beat diffuse, and on auscultation of the cardiac apex two sounds are heard nearly following one another and coincident with the dilatation of the veins, whilst at the same time during inspiration there is a retraction of the inferior intercostal spaces. The apex of the heart is lower than normal (sixth interspace), and more to the left (3 centimetres from the papillary line). The hand detects a triple fremitus, and on percussion there is an oblongated enlargement of the heart; on auscultation there are two bruits following quickly in succession, each corresponding to one cardiac impulse and to two pulsations in the jugulars, and these two murmurs are followed by a third but shorter one. The two murmurs are also heard over the aorta and pulmonary artery, but in neither of the two vessels can a diastolic sound be perceived; in the tricuspid the two murmurs, synchronous with the heart-beat, can be heard very forcibly, and a third bruit feebly, which is lost if the stethoscope is carried to the right, although the two others persist and the first is especially intensified. The radial pulse is 34 per minute, feeble, dicrotic, with a second sound very smooth, but getting stronger in the bronchial and axillary artery, and strongest in the femoral artery. The patient has dyspnœa (28 respirations per minute); percussion clear in the thorax, breathing vesicular and harsh; spleen slightly increased; the free margin of the liver palpable, but the hand perceives there a beat synchronous with that of the heart; the urine is scanty, slightly albuminous, with some yellowish casts.

The condition of the patient was alternately better and worse, and for some days could be observed a double cardiac and venous pulse, and on others there was but a single heart-beat with a single systolic venous pulse. In the latter case the pulse became more frequent, and during the period of single pulsation only the two cardiac sounds —a systolic and a diastolic—could be heard.

Atropia had no effect upon the regulation of the heart-beats, but digitalis showed a marked effect upon the regulation of the heart's action.

Dr. Bozzolo mentions three similar cases observed by Leyden, and is of opinion that in all the four cases there existed a change in the rhythm of the heart, dependent on some fault in the cardiac innervation, produced by the dyspnœic condition; this alteration in the cardiac rhythm makes the pulse both double and alternating.—("Annali Univer. di Med. Milano," Jan., 1877, pp. 13-16.)

Cardiac and Pulmonary Paralysis from Occlusion of a Coronary Artery. (By Dr. Antonio Galignani.)—G. Manini, of Piacenza, aged 64, porter and shoemaker, always led a sober and quiet life, and enjoyed good health; on returning one day from an errand, he was suddenly seized with languor and faintness, which obliged him to lie down; he then felt at once very chilly, and was covered with a profuse and cold sweat. He also complained of having since four days experienced a slight pain in the epigastrium. His face was very pale, and had the expression of great distress; there was nothing abnormal with regard to his intelligence, sensory or motor nerves; respiration 36 per minute, and accompanied with a loud rattling sound; pulse 56 and small; skin cold, perspiration not so profuse as at the beginning of the attack; the heart-beat not perceptible to the hand or eye, but with the stethoscope the cardiac sounds clearly but feebly audible all over the cardiac region, and unaccompanied by any bruit whatever. On percussion the heart appeared small, the cardiac dulness being limited to a smaller area. Vesicular breathing diminished all over the chest, and considerably less audible in the subscapular region. Abdominal organs normal; urine scanty. The clinical features of the case justified the diagnosis of cardiac paralysis succeeded by pulmonary paralysis.

The treatment by stimulation and excitation internally and externally gave no relief; after venæ-section (200 grammes of blood) the pulse became slightly stronger, but only for a short time; the patient gradually got worse, the shortness of breathing increased, the bronchial râles became louder, and the patient expired the same day, seven hours after the first attack.

Necropsy, 42 hours post mortem: In the thorax there were old pleuritic adhesions of the left side; œdema of the lungs; pericardium free, and containing little serum; the heart small, weak, pale, fatty and easily torn; the substance of the heart along the coronary arteries presented a hardness to the touch, resembling that of a bony substance. Few coagulated clots in the cavity; all valves in a sound condition. In the aorta, just above the valve, there was a slight softened concretion, resembling conglutinated sand, of the size of half a pea. The orifices of both coronary arteries rigid, and on exploration with small scissors, they appeared like two bony tubes, which could easily be separated from the tunica adventitia. The longitudinal or left coronary artery, about three centimetres below its origin, was occluded by a plug resembling the atheromatous concretion found in the aorta. All other organs were in a normal state.

This case presented the following course:—Atrophy and fatty degeneration of the myocardium with atheromatous ossification of the coronary arteries; sudden death caused by embolism of the left or anterior coronary artery, which succeeded the detachment of a fragment of atheromatous concretion from the sinus Valsalvi in the aorta.—("Ann. Univer. di Med., Milano," May, 1877, pp. 462-466.)

Diphtheria.—Dr. Francesco Ghiglia ("Archivio Clin.-Italiano dei Med. Condotti," Feb., 1877), arrives at the following conclusions:

1. Diphtheria has a great analogy to scarlatina.
2. A diluted solution of chloride of sodium is the most effectual and best tolerated remedy in diphtheria.
3. A tendency of the diphtheritic affection to spread may be looked upon as an unfavourable prognostic sign.—("Il Morgag., Napoli," April and May, 1877, p. 394.)

Laryngostenosis; Paralysis of Nervus Laryngeus Recurrens; Laryngotomy.—(By Dr. Pietro Donati.)—The author considers the difficulties attending the operation of tracheotomy—the objection on the part of relatives, arising from the fact that the cases are generally attended by physicians who, for internal affections, rarely call in the aid of a surgeon, and this but to operate in extremis, when, in the event of death, such a termination is attributed by the relatives to the opening of the trachea, and not to the serious nature of the disease. The author further relates the following case with the view of encouraging others in the performance of the operation.

A. T., aged 62, a merchant, whose father died at the age of 70 from some acute lung affection, and the mother died when young, from causes unknown to the patient. A. T., since an early age, was frequently subject to loss of voice (acute laryngitis). Since 1860 suffers from chronic gout with gradual deformity of various joints, especially those of the fingers. In 1868 had acute internal otitis in the left ear, with loss in the same ear of all power of hearing, and with chronic otorrhœa. In 1872 completely lost his voice for six months and became more or less hoarse. In 1875 had neuralgia, shooting pains in the left ear and its neighbourhood, and at the same time the symptoms of laryngeal stenosis commenced — hoarseness, difficult breathing, painful deglutition. Externally the throat had a normal appearance, except a slight enlargement of the left superior horn of the thyroid cartilage. The chest was little developed and presented no pathological signs whatever. The abdominal organs were in a normal condition; the general health satisfactory.

Considering this to be a case of chronic laryngeal catarrh with thickening of the laryngeal mucous membrane, and probably follicular ulceration of the latter, the treatment adopted was—seltzer-water with milk as a beverage, externally tepid cataplasms, locally insufflation with alum, later on pencillings with a solution of nitrate of silver. This treatment gave no relief, the dyspnœa became worse, the patient could not close his eyes without being threatened with suffocation; a laryngeal whistling noise could be heard even at a distance, during both inspiration and expiration; the skin became pale and cold, and the symptoms of obstructed respiration progressed rapidly.

A laryngoscopic examination made by Dr. Cristoforis showed redness and thickening of the entire mucous membrane; complete immobility of the left vocal cord, the internal edge of which appeared to occupy the middle line. During inspiration the movable right cord approached very closely to the left one, thus considerably narrowing the glottis; hence the whistling respiration and dyspnœa.

All the symptoms becoming aggravated, the same evening, on August 16th, 1875, tracheotomy was decided upon with consent of the relatives, who saw the patient in danger of life from threatening suffocation. The operation was therefore performed at once, with no difficulty, and a double canula of caoutchouc was introduced. The breathing was at once relieved, but there remained a complete loss of deglutition, even a sip of water caused grave signs of suffocation, and the patient refused any food whatever. The face became cadaverous, the pulse imperceptible, and the patient appeared moribund, when Dr. Donati suddenly thought of closing with his finger the aperture of the canula, whilst the patient was given some ice, then broth, wine, etc. He could easily swallow whenever he had the opening of the canula covered by the finger, and he gradually began to improve.

Eight days after the operation some mucous secretion commenced to accumulate in the canula, and twenty days after the mucous discharge became more abundant and sanguineous; the appetite was good and the patient could leave his bed, emit intelligible sound, converse in writing, and even attend to his business. Forty days after the operation the patient began to lose flesh, the pains in the left ear and in swallowing, returned, the voice became less intelligible. On the fiftieth day he had a serious attack of dyspnœa, with pain in the right side of the thorax, the pain being soon relieved by copious expectoration; there was slight dulness posteriorly in the base of the right lung. These attacks returned during the succeeding nights.

Every evening the temperature rose, and the loss of flesh was considerable. Later on there was observed a right pleuritic effusion, infiltration in the left pulmonary apex, and enlargement of the left thyroid cartilage by perichondritis. Cough frequent, expectoration abundant; the general wasting became very great, and the patient expired on November 18th, 1875, just three months after the operation of tracheotomy had been performed. No post-mortem could be obtained, a circumstance much to be regretted.

Dr. Donati subjoins the following remarks:—It is evident that the affection was at the time of the operation quite localised in the larynx, as the examination of the chest showed no signs of tubercles, which appeared some time after the operation. It is likely that the laryngo-stenosis was occasioned by paralysis of the nervus laryngeus recurrens sinister, probably due to pressure upon the nerve by enlarged and cheesy degenerated bronchial glands. This condition of the bronchial glands predisposed the patient to pulmonary consumption, which rapidly developed owing to the direct action of the air (admitted through the tracheotomy-tube) upon the respiratory organs, hence the pleurisy and tubercular deposit in the lungs. But although the operation may be accused of having led to the rapid development of a latent tubercular disease, tracheotomy was quite justified, as it prolonged a life which was threatened a sudden extinction through stoppage of respiration.—("Annali Univer. di Med. Milano," 1877, pp. 446-455.)

Catheterism and Mechanical Dilatation in Laryngo-Stenosis.—Dr. C. Labus ("Annali Univer. di Med.," Aug., 1876,) reports two cases of his own, and mentions eleven others of Dr. Schrötter, in which the direct catheterisation and dilatation of the larynx was effected with success in laryngeal stenosis. The instrument used was a silver canula 8 millimetres in diameter, and 25 centimetres long, and curved in the middle, the curve being the sixth part of a circle, with a radius of 5 centimetres. The vertical branch corresponding to the laryngeal extremity measured 15 centimetres from the plane of the horizontal branch, and had a transverse aperture. An elastic counter-canula ran within the metallic canula, and ended in the laryngeal opening with a cuneiform projection, the front part being provided with a knob, by which the forward and backward movement of the elastic tube could be effected. The instrument is introduced with the aid of the laryngoscope, and as soon as the glottis is passed, the button is pressed and withdrawn rapidly. This method of catheterisation may take the place of tracheotomy, as it allows the passage of air through the larynx in cases where there is a restriction of normal respiration; and in cases of laryngeal stenosis it is a much safer operation than tracheotomy.—("Il Morgagni, Napoli," Oct., 1876, p. 711.)

Internal Laryngeal Operations. — Dr. Bulgheri ("Gazzetta Med.

Lombarda," Nos. 35, 36, 1876), reports three cases of endo-laryngeal tumours, and two cases of laryngeal paralysis, cured by him.

The first case was that of an officer in the army, who had lost his voice gradually during the last fifteen months. On examination with the laryngoscope there could be seen a polypus, of the size of a small vetch, pedunculated and attached to the border of the anterior third of the right vocal cord. Not being successful in extirpating the tumour with Fauvel's forceps, Dr. Bulgheri decided to destroy it with the galvano-cautery. Aided by local anæsthesia, the galvano-cautery was applied seven times. The reaction was very slight, and in fifteen days the voice returned. Laryngoscopically in the place of the polypus only a slight nodosity could be seen. Two years later the local state was the same, and the voice satisfactory.

The second case was that of a papilloma on the left vocal cord, which had considerably increased in growth during the last two months. The operation consisted in the removal of the growth by means of Schrötter's forceps, and after twelve days the patient could speak with her natural voice. An examination made some months afterwards gave no indication of a reproduction of the growth.

The third case was that of a mucous polypus, of the size of a small pea, attached to the anterior third of the right vocal cord, with hoarseness since two months. The tumour was removed with Schrötter's forceps, and the patient not only immediately recovered her voice, but was able to breathe with greater ease.

Dr. Bulgheri remarks that he noticed in all the three patients a pallor in the cheeks and alæ nasi, and a blueness round the eyes; symptoms proving that there must have been an imperfect oxidation of the blood dependent on insufficiency in the respiratory function.

Dr. Bulgheri further relates two other cases of bi-lateral paralysis of the adductor muscles of the vocal cords, successfully treated with local application of the Faradaic current, with astringent insufflations, and with hypodermic injections of strychnia.—("Annali. Univer. di Med. Milano," Nov., 1876, pp. 432-433.)

New Laryngo-Tracheotom.—Dr. Giovanni Gregorelli made some experiments with his new laryngo-tracheotom, which consists of four small blades, attached to a wooden handle; the blades are exposed to white-heat, and used for operating. The advantages of this mode of operation are—absence of pain and of hæmorrhage, and finally the formation of a very good cicatrix.—("L'Imparziale, Firense," Aug. 3rd, 1876, p. 449.)

Tracheotomy Improvised for the Removal of a Pin from the Larynx.—Dr. G. Marcacci, of Siena, in a letter addressed to Professor A. Michelacci, relates the successful performance of tracheotomy in the case of a young man, who had, during a deep inspiration, drawn into the larynx a small pin which he had between his lips. The pin placed itself astride the vocal cords, partly obstructed the throat, and partly caused spasmodic contractions, and threatened the life of the patient. Two minutes after the occurrence a medical man saw the patient, and having no other instruments by him but a pocket-knife, he, without loss of time, with one cut performed tracheotomy, using his fingers in place of forceps. Some blood entering the laryngeal cavity caused the patient to cough, and at the same time the expulsion of the foreign body, through the mouth, was effected. The tracheal wound healed in a few days.—("L'Imparziale," Jan., 1877, pp. 51, 52.)

Nasal Polypus Removed by Galvano-cautery.—Dr. Domenico Mucci reports the case of a carpenter, aged 62, who suffered for some years from nasal obstruction, caused by a fibrous polypus in the right nasal cavity, and soft mucous polypi in the left nasal cavity. Taking the necessary precautions in protecting the healthy parts, the galvano-cautery could be applied to the fibrous polypus, which easily separated, but disappeared immediately within the nasal cavity, although the scab of the wound could clearly be perceived at the seat of its previous attachment. Two days after the operation, whilst the patient endeavoured forcibly to clear his nose, he expelled through the right nostril a piece of whitish and hard substance, which corresponded to the scab of the wound. The mucous polypi were removed with the forceps. No hæmorrhage accompanied the removal of the fibrous polypus. After the operation, the nasal respiration became quite free and easy; and the voice, formerly nasal, recovered its natural pitch.—("Annali Univer. di Med. Milano," Jan., 1877, pp. 7, 8.)

MATERIA MEDICA AND THERAPEUTICS.

Diphtheria.—1. Dr. Tomasso Billotti, during an epidemic of diphtheria, in 1875, in twenty-six severe cases tried, with excellent effects, the topical application of a solution of perchloride of mercury, and internally sulphuric ether or tinctura castorei. He prescribes—R. Hydrargyri perchloridi, partem unam; spirit. vini rectific., part xv; aquæ destill., part xx.; m. f. solutio. S. Apply, with a fine camel-hair brush, to the diphtheritic patches two to five times a day. All his patients recovered in one or two days. He advises sparely to dip the brush into the solution to avoid any risk of poisoning. He never saw any toxic effects, but should any happen, the albumen of one or two eggs, and an emetic will avert all danger.—("Il Morgagni, Napoli," Sept. 1876, p. 616.)

2. Dr. Fera ("Annali Univer. di Med.," Aug., 1876,) has successfully treated eighty cases of diphtheria by the topical application of powdered sulphate of iron, in the following manner: A horsehair

brush is dipped in finely powdered sulphate of iron, and applied to the diphtheritic patches in the throat; the parts sometimes bleed freely after the application, the pearly colour at once disappears, the surface of the mucous membrane becomes red, either immediately or after a second application. This treatment, repeated twice a day, soon reduces the febrile temperature, and the enlarged cervical glands and the patients recover in three or four days.—("London Med. Record," Nov., 1876, p. 499.)

3. Dr. Pavesi ("Annali Univer. di Med.," Aug., 1876,) recommends the following anti-zymotic formula for internal and external use in diphtheria: ℞. Chloral hydrat., acidi salicylici, glycerini, sodæ sulphitis, āā part 1½; spirit. vini, part. j.; aquæ part 3½. The mixture to be exposed in a strong and closed glass vessel to a heat of 100° to 102° Fahr., for a few minutes, then filtered and kept in a well-stoppered bottle.—("London Med. Rec.," Nov., 1876, p. 499.)

4. Dr. G. Ferrini considers diphtheria to be an infectious disease, and strongly recommends antiseptics, internally and externally. He used with good effect, locally, carbolic acid, lime-water, sulphide of sodium; internally, the same remedies but more diluted, and also plenty of milk and broth. But he obtained the best results from the internal and external administration of chloral hydrate. For topical application with a brush, he ordered a solution of chloral hydrate in glycerine (2 to 3 parts in 15 to 20); internally he prescribed 30 centigrammes of chloral hydrate in 60 grammes of syrupus cinchonæ; one teaspoonful to be taken every hour.—("L'Imparz.," Feb., 1876, p. 70.)

5. Dr. O. Marchionneschi, during an epidemic of diphtheria of a malignant nature, obtained excellent results from the internal administration of sulpho-carbolate of quinine in doses of from 15 to 25 centigrammes, repeated every hour, in all 45 to 75 grains pro die, and by the topical application of a solution of lactic acid and carbolic acid, the form of pencillings or gargle. He strongly recommends this treatment in all cases of malignant diphtheria, whilst in catarrhal diphtheria sulphate of quinine internally, with the local use of a lactic acid solution, generally suffices to give speedy and permanent relief.—("Lo Sper.," June, 1877, pp. 644-652.)

6. Dr. Merlini ("Arch. Clin. Italiano dei Med. Cond.," Jan., 1877), considers the different curative results obtained by medical men in the treatment of diphtheria, and arrives at the following conclusions:—

(*a.*) Diphtheria generally attacks persons of a lymphatic and scrofulous diathesis, with a bad state of nutrition; and in such individuals assumes the most malignant course.

(*b.*) No specific remedy is known for diphtheria, as there exist no means of arresting any contagious or epidemic disease.

(*c.*) All successful cases depend upon good individual and general hygienic conditions.

(*d.*) The greatest number of deaths occur before the seventh year of age, and the eighth day of disease.

(*e.*) As grave indications of great danger to the patient may be considered consecutive laryngitis, and, in a minor degree, violence of attack; affection of the pharynx with external glandular enlargement; and lastly renal complications.—("Il Morgagni, Napoli," Feb. and Mar., 1877, p. 232.)

Coryza Speedily Cured.—Dr. Davide ("Il Morgagni," July, 1876), recommends in coryza the following treatment (evidently copied from Dr. Ferrier), as tried with success on himself and others:—℞. Morph. muriatici gr. 1½, gummi acaciæ pulv. gr. 80, bismuthi subnitrat., gr. 270, m. fiat pulvis, S. for insufflation into the nostrils. One-fourth or one-half of this powder is introduced into the nostrils by aid of a bent piece of cardboard, and drawn up with the breath through the nose. This treatment should be resorted to when the catarrh is fresh, and the insufflation should be repeated at intervals, but once at a time.—("Ann. Univ. di Med. Milano," Jan., 1877, p. 70.)

Sylphium Cyrenaicum in Phthisis.—This remedy having been revived by Dr. Laval for the treatment of pulmonary consumption, Dr. Antonio Lombardo tried it in the case of a man aged 25, in the last stage of consumption, with a large cavity in the right lung. He sums up the results of its action as follows:—

1. Expectoration became much easier, dyspnœa diminished. (The patient exclaimed, "I feel a heavy weight off my chest!")
2. The heart-beats and pulse became more regular in rhythm.
3. A general sensation of ease and comfort induced the patient to ask for the repeated administration of this drug.
4. No disturbance of the digestive functions, and neither nausea nor diarrhœa, happened after its use.

Dr. Lombardo therefore considers sylphium to be an excellent expectorant, without causing any discomforts, and also a regulator of the cardio-vascular apparatus.—("Gaz. Med. di Roma," 15th Sept., 1876, p. 240.)

Æthiops Mineralis in Pertussis.—Dr. Chiricozzi relates three cases of hooping cough in which he administered the black sulphuret of mercury with good success, and strongly recommends this drug in all cases of pertussis.

1. A boy, aged 3½, who suffered since twelve days from severe attacks of hooping cough, came under Dr. Chiricozzi's observation; a further treatment during three weeks with anti-spasmodics and sedatives produced no effect; the expectorations examined under the microscope distinctly showed the presence of a fungus, first described by Dr. Cerasi and named by him oidium pertussis.*

Æthiops mineralis was then given in doses of fifty centigrammes per diem, and on the fourth day the attacks became shorter and milder, and on the ninth day perfect recovery took place.

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* This discovery is wrongly attributed to Dr. Letzerich.

2. In two more cases of hooping cough in children, aged respectively 2 and 5 years, the same treatment within a week resulted in the cure of the disease. ("Gaz. Med. di Roma," Dec., 1876, p. 295.)

Antagonism of Morphia and Atropia.—Dr. Corona ("Giornale di Med. Milit.," 1876) concludes from his experiments on the antagonism of these two drugs:—

(*a.*) Atropia lowers and morphia increases the heart's action.

(*b.*) While the cardiac action is being lowered there is either no change or only a slight increase in the temperature; but with the acceleration of the cardiac action by morphia there is always a fall in the temperature of the body.

(*c.*) There is a partial but not a mutual antagonism between the two drugs, morphia being an antidote in atropia poisoning, but not vice versâ.—("Monthly Reports on the Progress of Therapeutics," Dec., 1876.)

Bromide of Potassium in Heart Affections.—Dr. G. Angrisani concludes, from experimental investigations, into the action of bromide of potassium upon the heart:—

1. Bromide of potassium has a depressing effect upon the vaso-motor centres and nervous plexus of the heart.

2. The mode of this action upon the vaso-motor centres is peculiar and yet unknown, but certainly not dependent on any direct influence upon the smooth fibres of the capillary vessels.

3. Bromide of potassium has no effect upon the muscular fibres of the heart, as is the case with digitalis, and consequently has no effect upon the arteries.

4. Bromide of potassium is the most beneficial drug to be administered with the view of correcting functional cardiac disturbances, such as frequency, intermittence, arhythmic beats, whatever may be the condition of the myocardium.

5. It relieves speedily and safely in angina pectoris and cardiac palpitation, whenever these are of a purely nervous nature; but if these symptoms are dependent upon deep anatomo-pathological changes in the heart or the blood-vessels, bromide of potassium gives only temporary relief.—("Rivista Clinica di Bologna," Mar., 1877, pp. 75-79.)

Silver, its Effects and Use in Nervous Asthma.—Dr. Curci ("Giorn. Ven. di Scienze Med.," 1876), experimentally tried the effects of silver administered internally and hypodermically, and found its action to be on the sensory nerves, and through them on the posterior columns of the spinal cord. Silver at first stimulates and then paralyses the sensory nerve-centres, especially the respiratory centre; lastly, it annihilates reflex action. Dr. Curci highly recommends the use of silver in cases of nervous asthma, attended with spasm of the inspiratory and bronchial muscles. For his experiments he used: ℞. argenti chloridi, part j.; sodæ hyposulphitis, part iij.; aquæ destillatæ, part xxx. m. f. solutio. This solution is of a sweetish, slightly metallic taste, and irritates neither skin nor mucous membrane.—("Lond. Med. Rec.," Feb., 1877, p. 72.)

ELECTRO-THERAPEUTICS.

Naso-pharyngeal Polypus Cured by Electrolysis.—Dr. Ercole Viganoni ("Ann. Univ. di Med., Milano," Feb., 1877, pp. 147-153,) reports the case of C., aged 28, a shoemaker, who was admitted into the hospital of Monsa with frequent epistaxis since two years. On examination of the upper part of the pharynx could be perceived an oval and fleshy tumour, scarcely moveable, indolent, and of the size of a hen's egg. This tumour protruded from the right nasal fossa into the pharynx. Dr. Antonietti removed with the ecraseur a fibrous polypus; the fauces became free, but a part of the sessile tumour remained in situ in the nasal fossa. A month after, the tumour began to grow again, and in twelve months the patient again came to the hospital, this time suffering from a much larger growth than before. Dr. Viganoni, therefore, adopted the electrolytic treatment. The battery used consisted of twenty-one Daniel's cells; the galvanometer during the first sitting indicated the strength of the current to be 82. Two long steel needles, connected with the negative pole, were introduced through the mouth into the tumour, and a third silver needle, connected with the positive pole, was introduced through the right nasal passage into the front part of the polypus. The first operation lasted fifteen minutes. The second application took place three months later, there being no signs of reduction of the tumour, and the epistaxis being more persistent. This time a weaker current (galvanometer at first indicated 75, and gradually went down to 48) was used. The bleeding from the nose became less frequent, but there was no change in the swelling. The third application was made six weeks after, during fourteen minutes, with a still weaker current; there could be noticed a change in the appearance of the tumour; which looked more fibrous and pale. Epistaxis entirely stopped. Three more applications were made with intervals of seventeen, fifteen and thirty days, during fifteen minutes each time, and a weak current was used. But no diminution of the tumour could be noticed, and the patient was discharged. Five months later he presented himself in a good state of health, the tumour having almost disappeared, and only a very small portion could be perceived, which was easily removed by Professor Albertini with the galvano-cautery, to prevent a recurrence of the swelling.—("Il Morg.," April and May, 1877, p. 399.)

Electrolysis in Aneurism.—Dr. Franzolini ("Giorn. Ven. di Scienze Mediche," Jan., 1877,) considers electro-puncture a safe operation, likely to prolong life, and that it should, under favourable circumstances, always be resorted to. In two cases operated on by him there was clear evidence of hardening and reduction of the tumour after each operation.—("Il Morgagni, Napoli," Feb. and March, 1877, p. 233.)

Aneurism of the Innominate Artery Treated by External Galvanisation.—In a case of spontaneous sacciform aneurism of the brachiocephalic trunk of the aorta, Professor Gallozzi treated at first by rest, then with pills of cyanide of potassium and a cold lotion of perchloride of iron. There being no change in the condition of the patient, Gallozzi tried the external application of a continuous current of galvanism to the aneurismal tumour. After galvanisation each time there could be noticed a hardening and reduction of the tumour. The strength of the current used, as indicated by the galvanometer, was 60·65°, each application lasted eleven minutes, during five of which both conductors were kept fixed, and the remaining six minutes the conductors were moved about the surface of the swelling. There seemed to be no formation of clots in the reduced tumour, as pulsation could be distinctly perceived. No inconveniences whatever accompanied this treatment, except a reddening of the skin and slight smarting experienced during the first application of galvanism. After two months' treatment the patient, a man aged 51, felt quite at ease, and resumed his ordinary occupation.—("Il Morgagni," Sept., 1876, pp. 585-591; and "Lo Sperimentale," Feb., 1877, p. 134.)

Effects of the Galvanic Current upon the Arterial Wall of an Aneurism.—Professor Martino, referring to the case of aneurism treated successfully by Professor Gallozzi, with external galvanisation, reports another similar case which he treated with equal success by electrolysis. Martino makes some observations with regard to the action of galvanic currents in aneurism. The chief object in the treatment of aneurism, by whatever means, has always been the obliteration of the sac by the formation of clots; but in both the above-mentioned cases no clots could have formed. Martino thinks the success in these cases is due to galvanisation having occasioned strong contraction in the muscular fibres of the arterial wall.—("Lo Sperimentale," Feb., 1877, p. 134.)

Aneurism of the Thoracic Aorta Treated with Electro-Puncture. — By Dr. V. Omboni, of Bozzolo ("Il Raccoglitore Med.," Nos. 6-9).—Dr. Omboni relates a case in which the diagnosis was accurately made during life, and confirmed post mortem, and in which he repeated, five times, the operation of electro-puncture with the effect of prolonging the life of his patient in an ameliorated condition for a period of two and a-half years, although the case presented the most unfavourable symptoms at the time of the operation. Amongst these symptoms may be mentioned—a feverish state, cough, vomiting, and a feeling of suffocation; all these symptoms subsided after the operation, and death was caused by pleurisy and gastro-enteritis, but not by the aneurism. The necropsy showed cardiac hypertrophy, with lesions in the aortic and venous orifices, which were recognised during life before the operation; but the aneurism was found to have been lateral, and the walls of the aorta were of limited proportions and quite firm.—("Lo Sperimentale," May, 1877, p. 474.)

Aneurism of the Aortic Arch Treated Successfully by Electro-Puncture.—Dr. F. Verardini describes the case of a lady, aged 40, who was admitted into the hospital with an aneurism of the summit of the aortic arch, slightly inclined to the left, and pushing forward the manubrium sterni. Having in vain tried injections of ergotine in the neighbourhood of the tumour, and the application of cold wet bandages, Dr. Verardini decided to use electro-puncture. Two long steel needles were introduced, at a distance of two inches apart, into the tumour, and connected with the wires of a voltaic battery, consisting of thirty plates of copper and zinc, each 4 inches square, and moistened with a strong solution of common salt; after eight minutes, a darkish circle being noted near the positive needle, the wires were reversed to avoid sloughing, and thus, by again reversing the poles, the operation could be safely prolonged during twenty-four minutes; the needles then ceased to oscillate, which is a certain sign of coagulation of blood having been effected within the aneurism. The patient felt greatly benefited and underwent another operation twenty-six days after the first; and this time, feeling herself in improved health, left the hospital and returned home to follow her ordinary domestic duties. Five years later, having carried some heavy weight, she again began to suffer from the aneurism, which rapidly increased in size. Electrolysis was again resorted to, with speedy relief; and the operation was repeated twice more, after which no signs of the aneurism could be traced by the most careful examination repeated for some months after.—("Lo Sperimentale," June, 1877, pp. 701, 702.)

HYGIENE.

Respiratory Gymnastics.—(By Dr. G. Franchi).—Every muscular exercise is a direct or indirect excitant of the respiration, and gymnastics, in strengthening the entire organism, may avert and combat whatever may be injurious to the lungs. Dr. Franchi, in his essay, limits his considerations to such direct pulmonary gymnastics as can be effected with or without the aid of phonation.

1. *Vocal Gymnastics.*—Phonation is an energetic means of strengthening and developing the lungs and the organ of voice. The vocal organ consists of—

(*a.*) The inferior vocal cords, two folds of the laryngeal mucous membrane, resembling the membranous tonguelets of some musical instruments, but differing from them in the muscular and elastic power, being capable of producing a greater variety of sounds; and in the power of the will, in controlling and effecting endless changes in the tension of the cords, and also in the size and shape of the vocal aperture, and diameter of the vocal tube.

(*b.*) The windpipe—trachea and bronchi.

(*c.*) The bellows—lungs and accessory respiratory organs, such as the respiratory muscles, the thoracic walls, the diaphragm, etc.

(*d.*) The vocal tube—larynx, pharynx, cavities of the mouth and nose.

The voice originates in the rima glottidis, between the inferior vocal cords, which vibrate sensibly; the air contained in the lungs both produces the sound and sustains the respiration. With the aid of Dr. F. Ghenard's apparatus one can experimentally demonstrate the independence which exists between voice and speech. Any given sound or noise may, by vibration of the air contained in the vocal cavity, be transformed into articulated language.

The vocal organ may be exercised by conversation, loud reading, singing, or reciting; the effect of these different modes of phonation will be directly reflected upon the lungs, larynx, and accessory organs of speech. The lungs, or air-reservoir, will execute more frequent and much deeper inspirations, and will thereby increase the size of the thorax, which will expand in proportion to the enlarged lungs. Segond calculated that a singer breathes more air in twenty minutes than one who is not singing will normally respire in an hour. The larynx becomes stronger in singers, and this is also the case with the rest of the ærial tube. The respiratory muscles, the thoracic walls, and the diaphragm, which all act like bellows, also participate in the gains obtained by exercise.

It will be evident that such exercises as reading aloud, reciting, and singing ought to form an integral part of any complete system of educational gymnastics. The phonetic exercise, like all other exercise, ought to be limited and proportioned to the strength of the individual pupil. An hour of loud reading ought to be considered the maximum, and should not be exceeded. Singing and public speaking in exciting the action of the diaphragm will be impeded by an overfilled stomach, and, therefore, singers, orators, barristers, clergymen, and other public speakers would act wisely in taking but a light meal before appearing in public. The exercise of speech is especially useful to those who lead a sedentary life, and will serve as a preventive means against the development of hepatic or phthisical disease. Tissot attributes the scarcity of liver complaints amongst the clergy to the frequency of their monastic songs. Cuvier, menaced by a slow pulmonary affection, quite recovered after being called to occupy the chair of Natural History, wherein his name became so illustrious. Mantegazza, with a slender and thin thorax, found the same getting wider by five centimetres after his call to the chair of Medicine. Chateauneuf, during ten years' registration in the four hospitals of Paris, did not find a single case of death from phthisis in any person who followed the occupation of a public common crier or of a barrister.

The beneficial effects of methodical vocal gymnastics do not justify us in considering them quite harmless to the vocal organs; for, if phonetic exercise, within certain limits, can be well borne by strong constitutions, weak persons, with short and feeble breathing and predisposition to chest affections, such as tubercles or bronchitis, ought not to allow themselves similar excesses of phonetic exercise. Total abstinence of speech, absolute and prolonged silence, weaken the functions of the digestive organs, as well as those of the respiratory and vocal organs, predispose to tubercular disease, and stupefy the mental faculties. On the other hand, excesses in speaking, singing, shouting, will lead to weakness of the laryngeal and thoracic muscles, produce pains in the chest, attacks of dyspnœa, temporary and nervous aphonia, hoarseness, etc. If the excesses are habitual, they may be followed by hæmoptysis, chronic aphonia, laryngeal phthisis, pulmonary emphysema, cardiac disease, etc.

An application of vocal gymnastics is found in most infant and elementary schools in the teaching of songs. Curci said :—" School-music is like the ventilation of the mind." A further practical application of vocal gymnastics is found in the military choral school of Milan. Another instance of vocal gymnastics, and its most important application, is seen in the treatment of stammering, which is followed by brilliant results, as reported by Drs. Coen, Chervin, Lion, and other specialists.

2. *Direct Pulmonary Gymnastics.*—These may be had quite independent of phonation. Many consider respiration as being similar to digestion and circulation, functions performed unconsciously, and without ourselves being enabled to modify their regularity and intensity; on the contrary, it is possible to regulate the respiratory function with the view of expelling any noxious gas, or of re-establishing the physiological limits of the respiratory and vocal scope; to relieve hoarseness, to expel mucous, etc.

Sedentary life, forced mental work, tight dresses, are amongst the causes which diminish the respiratory action. Those who are in the habit of standing or sitting, bent over some framework, over the microscope, over a book, will effect fewer and shallower respirations than those who walk or sing. Such evils may be counteracted by direct or indirect respiratory gymnastics. With regard to direct pulmonary gymnastics, independent of phonation, the most simple and natural exercise consists in performing, a few minutes in succession, deep inspirations, and in interrupting any occupation by rising from the seat. A more energetic respiration is obtained by closing the mouth and placing the finger before one nostril, and drawing in the breath profoundly through one nostril only. Another means of direct pulmonary gymnastics is the respiration of condensed air, which increases the capacity of the lungs, and favours the absorption of a larger quantity of oxygen and the exhalation of more carbonic acid. The respiration in a rarefied air is also a direct pulmonary gymnastic, by accelerating the respiratory action. There are also various apparatus for the execution of pulmonary gymnastics independent of phonation, such as the respiratory tube of Mantegazza, the respiratory apparatus of Dr. Bicking, the spirometer of Hutchinson, and others.

Finally, direct respiratory gymnastics are to be recommended to all persons, but especially to young girls. Women are excluded by various reasons from a great many healthy exercises, yet have more need of healthy respiration; they must therefore compensate the want of indirect pulmonary gymnastics by exercising the lungs directly.—("L'Imparziale, Firense," 18 April, 1876, pp. 245-250.)

Legal Medicine.

Rupture of a Fatty Heart after a Blow.—Dr. A. Tamburini ("Rev. Sper. di Freniatria e Med. Leg.," 1876,) relates the following occurrence:—

During a fighting brawl between two women, the younger happened to fall upon the elder one, who was seventy years of age; the former had her knees upon the latter's back, and struck her with a stone. When separated the old woman rose with difficulty, suddenly got very pale, and with a loud cry fell down dead.

The necropsy showed a rupture of the left cardiac ventricle, about one centimetre long; the walls of the right ventricle were fatty, degenerated, and especially soft and friable, with beginning destruction of the musculary fibres adjoining the lacerated parts.

The question presented itself what share in the fatal rupture of the heart was due to the traumatic cause, and what to the fatty degeneration of the organ. Dr. Tamburini, in giving legal evidence, stated:

1. Death was produced by the rupture of the heart.
2. A fatty degeneration of the myocardium predisposed to the laceration, especially in the spot where the rupture actually happened, as this spot had already been in a more advanced state of destruc-

tion than others, and would sooner or later have ended in death even without any occasional cause.

3. The sudden striking with the stone had no doubt contributed to determine the laceration, but must not be considered as the sole, direct, and effective cause of death, as the violent emotional condition during the fight, and also the muscular effort exercised in the attempt of raising herself after the fight was over, should be accepted as the immediate and ultimate fatal cause.—(" Ann. Univ. di Med., Milano," Mar., 1877, pp. 282, 283.)

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Pathology and Therapeutics of the Larynx, comprising the technical use of the Laryngoscope for medical men and students, by Dr. F. Massei. Review by Dr. V. Zannini.

Patalogia e terapia della larynge, compresa la tecnica laryngoso copica ad uso dei medici e degli studenti, pel Dottore Ferdinando Massei.

The work is divided into four parts :—

1. The first part, with eleven sections, describes very minutely the anatomy and physiology of the larynx, with special reference to individuality, sex, age, and with regard to the modification of the laryngeal organs in various animals.

2. The second part gives the history of invention of the laryngoscope, and considers the meritorious claims of all investigators, such as Bazzini, Cagniard de Latour, Babington, Liston, Garcia, Türk, and Czermak.

3. The third part treats of all laryngeal affections, which are described very elaborately, commencing with the various forms of laryngitis, from simple acute catarrh to stridulous laryngitis or pseudo-croup ; he further considers laryngeal tuberculosis, and expresses his firm opinion that laryngeal phthisis always depends upon tubercular affection of the laryngeal mucous membrane, and establishes three principal forms—(*a*) Ulcerous form ; (*b*) tubercular perichondritis without ulceration ; (*c*) Deposit of miliary granulations in the laryngeal mucous membrane. In the chapter on syphilitic disease of the vocal organ, the author strongly supports the view of Krishaber and Maurice against Lewin and Waldenburg, that there always exist plaques in the mucous membrane of the larynx. He next considers lesions, laryngeal neurosis, foreign bodies in the laryngeal cavity, wounds and fracture of the larynx. Much study is devoted to laryngeal tumours, the author mentioning amongst others also forty-three original observations of neoplasmic formation within the larynx.

4. The fourth part contains a description of all the laryngoscopic operations, including insufflation, intra-laryngeal injection, scarifica-

tion, galvano-caustics, and laryngeal sounding.—("Lo Sperimentale," March, 1877, pp. 354—357.)

MISCELLANEOUS.

Correlation between the Cardiac Pulse and the Sex of the Fœtus.—Dr. Mattei concludes, from numerous observations, that in a male fœtus the heart-beats do not exceed 135 per minute, whilst in a female fœtus the heart-beats are 150-160 per minute. But if the beats are between these figures, the sex of the child cannot be determined with certainty. Dr. Mattei further states that the cardiac pulse must be ascertained during pregnancy, and not during labour.—(Gazzetta Medica di Roma," Sept., 1876, p. 224.)

Artificial Respiration.—Professor Pacini is of opinion that to resuscitate from apparent death it is not sufficient merely to introduce air into the lungs, but also to make it circulate. All known methods having the first object only in view, he adopted a novel and simple plan to effect both indications. By his method the air is made to enter the lungs by way of aspiration, as is the case in normal respiration, whereby all internal pressure is diminished, the exhalation of carbonic acid is induced, the blood is forced to circulate in the vessels, and the heart's action becomes restored. The plan adopted by Pacini can be executed by any person, medical or layman. The patient is placed on his back upon a slightly inclined plane of wood, the mouth is opened, the fauces cleared of any accumulation of mucous discharge or foreign matter, the tongue is drawn forward; the operator places himself behind the patient's head, having the latter between his legs, and grasps firmly both arms near the axilla, and elevates them as if trying to bring them towards the operator, and then lets them assume their original position; this is done repeatedly, and thus inspiration and expiration are performed just as in the case of natural breathing. Should there be no wooden plane at hand, the patient is placed on the floor, his head slightly elevated and kept between the knees of the operator. Dr. Pacini has tried this method in seventeen cases, of which he gives the details.—("L'Imparz.," Jan. and Feb., 1877, pp. 41-46, and 75-83.)

RUSSIA.

(*Report by* ADOLPHE WAHLTUCH, M.D., ETC., ETC., Assistant Editor).

ANATOMY AND PHYSIOLOGY.

Supernumerary Semilunar Valves of the Heart.—Dr. R. Albrecht, Prosector at the Obuchow Hospital, communicates five cases of supernumerary cardiac valves observed by him during the last four years amongst 2,500 post mortem examinations. He remarks that excesses of cardiac valves are very rare, as he finds but few cases mentioned by various authors:—Meckel[*] reported five cases of four semilunar valves in the pulmonary artery; Kelch[†] one case of four valves in the aorta; and four semilunar valves in the pulmonary artery have been found in one case only by each of the following authors:—Morgagni,[‡] Petsche,[§] Penada,[||] and Huber.[¶]

The five cases observed by Albrecht represented two with four valves in the aorta, and three with four valves in the pulmonary artery.

1. In a woman, aged 50, who, two days after her admission into the hospital, died from visceral syphilis and marasmus, were found four aortic valves, three of equal size, and the fourth somewhat smaller. In all four the noduli were sufficiently developed. The sinus valsalvæ were distinct in two, and indistinct in the other two semilunar valves. The heart appeared to be normal in every other respect.

2. In a man, aged 56, who died from cardiac disease and marasmus, there were also found four aortic valves, one of them being smaller than the rest. There was considerable sclerosis with atheromatous deposits in the aorta and larger arteries. The heart was excentrically hypertrophied. All the four valves were thick, and the nodules covered with calcareous deposit.

3. A man, aged 36, died from cardiac disease. The heart presented

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[*] Meckel, "Handbuch der Pathol. Anat.," II., 1, p. 138, 1816.

[†] Kelch, "Beiträge zur Pathol. Anat., Berlin," p. 81, 1813.

[‡] Morgagni, ("Dec. et s. Ep.," 34 a, 15).

[§] Petsche, ("Syll. abs an rec. in Hall. coll. diss.," Vol. VI., p. 774.)

[||] Penada, ("Saggio terza dossen Med. Anat. Padove," No. III., p. 45, 1803.)

[¶] Huber, ("Sömmering's "Gefässlehre," p. 33.)

a colossal dilatation with hypertropy, considerable insufficiency of the aortic valves, moderate cylindrical dilatation of the aorta ascendens, with ulcerative appearance and atheromatous deposit in the intima of the entire aorta. In the right ostium arteriosum were discovered four semilunar valves, one of them of considerably less size than the other three; all valves had nodules. The shape of three of the valves was that of a crescent, whilst the fourth and smallest had a funnel-shaped appearance.

4. A woman, aged 42, died one and a-half hours after admission with symptoms of pulmonary œdema. In this case the pulmonary artery also presented four valves, one of which was of a smaller size than the others. All four possessed thickened noduli. The free edges presented in all the four valves a fenestrated appearance. The heart showed hypertrophy with dilatation, as the result of a considerable stenosis of the mitral valve.

5. A boy, aged 12, died from acute miliary tuberculosis, with cheesy degeneration of the bronchial and mesenteric glands. The heart was very small, and in the pulmonary artery were found four semilunar valves, two of which were but half the size of the other two. The two smaller valves appeared in their middle portion to be united by their lateral edges, and separated from the arterial wall, whilst they adhered in all other parts closely to the artery. Each of the four valves had a separate nodulus of its own.—("St. Petersburger Medicinische Wochenschrift," No. 24, 1876.)

Effects of Blood-pressure on the Rhythm of the Heart.—Dr. S. Tschiriew, of St. Petersburg, has made experimental investigations with the object of ascertaining the dependence of the cardiac rhythm on variations in the blood-pressure, and confirming the results of similar experiments obtained by other investigators, such as Ludwig, Thiry, Bezold, Cyon. But Tschiriew describes some new phenomena observed by himself, viz., a considerable and sudden diminution of the heart-beats, after section of the cervical nerves, or complete separation of the heart from the central nervous system; and later on a considerable acceleration of the pulse at the subsidence of the blood-pressure on cessation of compression of the abdominal aorta.

Tschiriew finally sums up the results of his experiments as follows:—

1. Great and rapid oscillations of blood-pressure produce alterations in the rhythm of the isolated heart.

2. Every considerable and sudden increase of blood-pressure can excite the inhibitory cardiac apparatus as well as the motor ganglia of the heart by accelerating or retarding the heart-beats.

3. The result and nature of the altered rhythm during the increased blood-pressure, always depend on the reciprocal action of the two above-named factors.

4. A weak stimulation of the nervus vagus being sufficient to entirely suspend the phenomena of a maximum stimulation of the nervus accelerans (Bowditch), it will be evident why, in those cases where the inhibitory cardiac apparatus is sufficiently developed and excitable, the increase of the blood-pressure generally lowers the rhythm of the heart, and the accumulated stimulation of the motor ganglia becomes apparent, after the cessation of the blood-pressure, as a subsequent acceleration. On the other hand, if the inhibitory apparatus be feebly developed or exhausted after previous stimulation, then a considerable acceleration may happen even at the time of the increased blood-pressure.

5. The more intense the increased heart-beats during the higher blood-pressure, the less marked will be the subsequent acceleration; and vice versâ.

6. The heart also receives a steady and tonic stimulus from the acceleratory nervous apparatus. The central parts of this apparatus are stimulated by increase of blood-pressure only, and never by a diminution of the same.

7. In the normal condition there is also an indirect influence in addition to the direct one, viz., through the nervi vagi and accelerati.

8. Atropia in small doses paralyses the peripheric ends of the nervi vagi, but has no effect upon the inhibitory cardiac apparatus.

9. The pulsus bigeminus is but a slower pulse with peristaltic contraction of the cardiac ventricle.

10. Anacrotism of the pulse, as observed in cases of insufficiency of the aortic valves and also in arterial sclerosis, is the expression of peristaltic cardiac contractions, and not of oscillations in the elasticity of the wall of the vessel.—("Centralblatt für Med. Wissensch.," Nos. 35, 26, Aug., 1876, pp. 609, 610.)

Action of Ozone upon Animals, 1876 (Dissertation by W. Tschemesoff.)—The discovery of ozone and its property of being a powerful oxidising agent was considered of great importance; epidemic disease was believed to bear relation to its presence or absence; the oxidising action of oxygen within the blood-current, as well as its rapid disappearance from the blood in asphyxia, lead to the conclusion that oxygen is changed within the blood into ozone. Fresh blood or its oxy-hæmoglobin no doubt gives the reaction of ozone, but the latter has not yet been extracted from the blood; hence the generally-adopted view that the blood corpuscles convert the oxygen into ozone, but that this ozonisation takes place in the same ratio as is required for oxidisation. But before ozone had been discovered, Schubler made the observation that electrified oxygen acts injuriously upon animals, and later investigators have found that ozone has an irritating effect upon the respiratory tract somewhat resembling the action of chlorine gas upon respiration; and if animals inhale ozonised air for some length of time they ultimately succumb. The author, in his dissertation, especially investigated this effect of ozone upon the respiratory organs. He began his experiments upon rabbits and dogs, who were made to inhale air ozonised by Bobo's apparatus. These animals very soon manifested signs of irritation, not alone of the respiratory tubes, but also of the conjunctiva of the eyes, after 5 to 15 minutes, followed by a gradually increasing difficulty and shortness of breathing; the number of respirations fell, cyanosis became marked, a colourless discharge came out of nose and mouth, the animals got weaker, and died 1½ to 3 hours after the beginning of the experiment; post mortem discovered œdema pulmonum as having occasioned death. Other rabbits were made to inhale ozonised air with frequent interruptions during several days, and being examined after death (which often occurred during the inhalations, or was brought about by having the animal killed after the experiment), the lungs showed signs of inflammation, and not of œdema.

In all the animals who perished from the ozone inhalations, the blood was found to be thicker and darker than is the case in the normal state; the loss of water in one case amounted to 8·3 per cent. The microscope and spectroscope detected no changes in the blood, whilst the direct action of ozone upon blood when examined out of the body always results in very distinct changes both in the shape of the blood corpuscles and also in the absorptive stria of the hæmoglobin. Further observations show that ozone inhalations have no influence upon the amount of carbonic acid eliminated by the skin and lungs; and the author, therefore, concludes that ozone, as such, never enters the circulation.—("Sdorovie (Health)," No. 46, Sept., 1876, pp. 386, 387.)

Oxidation in Asphyxiated Blood.—Dr. N. Stroganoff, from experiments on rabbits, arrives at the following conclusions:

1. The blood of an asphyxiated animal, even at the last contraction of the heart, always contains oxy-hæmoglobin.

2. The asphyxiated blood invariably absorbs considerably more oxygen than corresponds to its amount of hæmoglobin.

3. The blood of an asphyxiated animal has the power to absorb almost all the oxygen from the air in the lungs, even after the cessation of the respiratory movements.—("Pflüger's Archiv.," Bd. xii.; "Centralblatt für Med., Wissensch.," No. 28; "London Med. Rec.," Dec., 1876.)

Lymphatics in the Aorta.—Dr. Stroganoff, having tested the investigations made by Langhans, Ranvier, and Koster, who described the lymph-channels in the internal coat of the aorta, arrives at the conclusion that the various networks brought to light by the different modes of staining and injecting, are due to the irregular deposit of the colouring matter in folds of the delicate lining membrane.—

("Archives de Physiologie," July, 1876; "Lond. Med. Rec.," Jan., 1877.)

DIAGNOSIS.

External and Internal Examination of the Larynx.—Dr. A. Schiltoff ("Mosk. Med. Gaseta," Nos. 25, 26, 1876,) mentions some cases which present great obstacles to a proper diagnostic examination of the larynx, and draws the attention to some important external signs: thus he found, in two cases of inflammation of the vocal cords, on external pressure of the corresponding portion of the larynx, more tenderness, and considerable diminution in the vocal vibration. To reduce the great irritability of the pharynx and epiglottis, he tried the application of various drugs, such as tannin, sulphuric ether, etc., with no effect; but the topical application of tincture of opium considerably diminished all irritation. Moderate chloroform inhalations (after Voltolini) had a similar good effect; after such inhalations the laryngeal mirror could be tolerated for forty seconds, whilst, prior to the chloroform narcosis, reflex action prevented the mirror being kept longer than ten seconds. —("St. Peters. Med. Wochensch.," No. 24, 1876.)

Expansion of the Lung-Apex in Pulmonary Phthisis.—Dr. Hænisch ("Deutsch. Archiv. für Klin. Med.," xix. 4, p. 336,) examined with an instrument, especially constructed after his own instructions, twenty-eight healthy and thirty-one phthisical persons, with the view of ascertaining the expansion of the pulmonary apices, and derives from such examination the following conclusions:

1. In healthy individuals there are no considerable differences in the inspiratory power of the pulmonary apices; the instrument registered in men, between the ages of 21 and 36, an average of 12½ millimetres.

2. Wherever only one apex is affected, there is a difference in the inspiratory power between the two, that of the affected lung being much lower, especially in the following cases:

(*a.*) Catarrh of the bronchioli—percussion sound normal, fine vesicular râles, with normal or modified vesicular respiration.

(*b.*) Consolidation of the pulmonary parenchyma—percussion sound, dull, or tympanitic; bronchial respiration.

(*c.*) Vomica, symptoms of.

3. Diminished inspiratory power of one pulmonary apex with no other local physical signs, and with symptoms of general disturbance, must not be considered as an indication of apex affection.

4. In phthisical patients the affected pulmonary apex shows an inspiratory power of 2½ millimetres less than the average; but the healthy apex also shows a diminution.

Dr. Hænisch also paid attention to the position of the clavicle. In normal conditions the acromial ends are higher than the sternal ends; whilst, in pulmonary apex affections, the acromial end of the clavicle always appeared much lower on the affected side.—("St. Peters. Med. Wochensch.," No. 23, June, 1877, p. 208.)

Movability of the First Rib.—Dr. Amburger describes a new diagnostic sign to ascertain the movability of the first rib. He remarks that the ossification of perichondritis often leads to loss of movability in the first rib, and that this interferes with the expansion of the lung-apex, and may result in tubercular disease of the lung. He refers to the direction of the subclavian artery, which passes between the first rib and the collarbone before it enters the axillary fossa. By fixing the clavicle and lowering the scapula, when both arms are turned downwards and brought together at the back near the sacrum, and a deep inspiration made, the radial pulse will gradually disappear, owing to the compression of the subclavian artery by the rib towards the collarbone; but in case of an immovable condition of the rib such a compression will not take place, and the radial pulse will be distinctly felt. This diagnostic test may be especially useful in cases of young persons with predisposition to phthisis, and also in the examination of recruits for military service.—("St. Peters. Med. Wochensch.," No. 16, April, 1877, pp. 129, 130.)

Pathology.

Cellular Elements in the Internal Coat of an Inflamed Artery.—Dr. Stroganoff's experiments confirm the view of Traube that the cellular elements found in endo-arteritis are derived from the blood within the cavity of the vessel, and not from proliferation of pre-existing cells or from the vessels supplying the external coat. He invariably found the sub-epithelial layer of the intima infiltrated with numerous cells resembling white blood corpuscles, and also a smaller number of red blood corpuscles. There were no signs of extravasation in the vasa vasorum, nor could be noticed any of these cellular bodies in the outer coats. The escape of blood corpuscles through the epithelial layer may be explained by the dilatation of the aorta and increase of pressure due to cardiac hypertrophy.—("Archives de Physiologie," Aug., 1876; "Lond. Med. Rec.," Jan., 1877.)

Fungus Pertussis.—It is now three years since Dr. Letzerich investigated diphtheritic affections, and declared that hooping-cough also depends on the development of a special fungus. Lately Dr. Samer discovered, in the sputa of patients suffering from hooping-cough, a microscopic fungus, which is at first suspended, and after a while becomes deposited in the sputa. It consists of whitish corpuscles, resembling sharp ends of needles, and of larger yellowish corpuscles, which are of diagnostic importance in pertussis. Besides these there are also smaller fungoid bodies and greenish sporules. Dr. Samer considers these fungi identical with those found as blackish spots upon apples, oranges, lemons, etc. Dr. Samer inoculated rabbits with each of these fungi, and gave them as an inhalation to children, and always succeeded in producing hooping-cough. Dr. Samer calls this fungus—capnodium citri.—("Sovremennaja Med.," No. 38, 23rd Dec., 1876, p. 545.)

Parasites in the Lungs of Small-pox Patients.—Dr. Ivanowsky, Prosector at the Medico-Chirurgical Academy of St. Petersburg, in examining fourteen bodies of patients who had died from small-pox, found in the lungs of eight a number of small scattered nodules, chiefly in the lower lobes of the lungs, and resembling the nodules in acute catarrhal pneumonia. Under the microscope they consisted of central, roundish little bodies, possessing an intense power of light refraction. These were surrounded by white blood corpuscles and also by new pathologic ovula within a dense mass of fibrous tissue. The ovula were chiefly found in the alveoli covered by enlarged capillaries. A micro-chemical examination demonstrated that the peripheric ovula became easily destroyed if acted upon by acetic acid, whilst the more central ovula remained intact, and thus showed a different nature to those placed in the periphery. The author considers them to be colonies of micrococci, identical with those discovered (by Cohn, Hallier, Klebs, and Zulzer) in the pustules of vaccina and variola. The author suggests that these micrococci may have been inhaled and arrested by the alveoli, where they cause a reaction in the tissues and then become the source of general disease.—("Sovrem. Med.," No. 33, 4th Dec., 1876, p. 464.)

Changes in the Mucous Membrane covered by Ciliated Epithelium occurring in Catarrhal Inflammation.—Dr. St. Possadsky publishes (in Rudnew's "Journal for Normal and Pathological Histology," September and October, 1876,) the results of his microscopic investigations of the changes in the mucous membranes covered by ciliated epithelium (trachea, tuba Fallopii, tuba Eustachii,) in catarrhal inflammation.

1. Dilatation of the blood vessels in the sub-epithelial stratum of the mucous membrane, with increase of red blood-corpuscles. Vascular inflammation of the sub-epithelial tissue.

2. Emigration of white and red blood-corpuscles, and infiltration by them of the sub-epithelial tissue. Stage of inflammatory granulation.

3. Passage of the migrated elements through the epithelial cells towards the surface of the mucous membrane; admixture with the mucus; formation of the chief constituent of inflammatory secretion. Stage of inflammatory exudation.

Dr. Possadsky distinguishes between superficial catarrhal inflammation, in which the epithelium alone is affected, and deeper seated inflammation, with or without participation of the epithelial cells as described above.—("St. Peters. Med. Woch.," No. 1, Jan., 1877, p. 5.)

Endocarditis Ulcerativa.—Dr. Dobushinsky (Rudnew's "Journal for Norm. and Pathol. Histology," vol. xi.,) describes three varieties of changes in the endocardial tissue: (1) Infiltration with red blood-corpuscles; (2) Granular endocarditis; (3) Vascular-granular endocarditis.

The infiltration with red blood corpuscles is derived from the cardiac cavity, and is either due to the action of acute infectious processes upon the endocardial tissue (typhus, febris recurrens, pyæmia, septicæmia), or is occasioned by mechanical effects, such as friction, distension, or increased blood-pressure (nephritis, valvular disease). The infiltration with red blood corpuscles always takes place and forms the initial momentus of endocarditis. The extravasation of the red corpuscles leads to a retrogressive metamorphosis and to ulcerative destruction of the tissue. Through the addition of colourless corpuscles, derived likewise from the cardiac cavity, and through the infiltration of the endocardial layers, a progressive metamorphosis begins to take place. The process of granulation results in fibrous thickening or in fatty degeneration. In the further course there can be noticed a vascular, and later on a vasculo-granular inflammatory condition of the connective tissue, which gradually extends to the layer of longitudinal fibres. But all the retrogressive metamorphoses, which may also occur in the later stages of inflammation, are chiefly due to the presence of more or less red blood-corpuscles. Sooner or later occurs a parenchymatous inflammation of the endothelium. In both the second and third stages of endocarditis vegetations may be formed, which is especially the case whenever, during the progressive metamorphosis in the first stage, disturbances of continuity take place in the endocardium. Disintegration of the endocardium occurs in abdominal typhus and in febris recurrens, but does not differ in appearance from such endocardial changes as are produced by valvular disease. In no case could lower organisms be discovered in the ulcerated endocardium.—("St. Peters. Med. Woch.," No. 22, May, 1877, p. 201.)

Dr. E. Lœwy describes two cases of endocarditis ulcerativa in the right ventricle. In the one case there was a recent perforation of the external flap of the tricuspid valve; also embolism of the pulmonary artery. In the second case the endocardial inflammation took place in the right heart close to the open foramen of the ventricular septum; the swelling was circumscribed and in the direction of the blood-current from the left ventricle through the open foramen into the pulmonary artery. Both specimens are now in the possession of the Pathological Institution of Dorpat.—("St. Petersb. Med. Woch.," No. 22, May, 1877, p. 201.)

Embolic Infarctus.—The experimental researches of A. Kossuchin, under the direction of Professor N. S. Afanassieff of Kieff, made on the ligatured lingual artery of frogs, with the view of ascertaining the mode of formation of embolic infarctus, and also the consequent disturbances in the circulation, lead to the following conclusions:—

1. The plugging by an indifferent embolus, or by ligature of arteries that have, behind the plug, such anastomoses as are sufficient to carry on the normal circulation in the domain of the plugged artery, causes no changes whatever.

2. The plugging of arteries with anastomoses that are not sufficient to carry on a normal circulation may produce a retardation in the blood-current of more or less duration, and also cause venous stasis.

3. The plugging of arteries that have no anastomoses behind the plug, such as final arteries, will cause a sanguineous infarct.

4. The plugging of any final artery of a moderately large size will always be accompanied by collateral fluxion in the neighbourhood of the embolic part, viz., dilatation and injection of the capillaries, pulsation in the arteries and capillaries, acceleration of the blood-current with increase of lateral pressure, and finally diapedesis of red blood corpuscles with hæmorrhagic spots.

5. Collateral fluxion is the chief factor in the production of engorgement and infarction of the parts affected by embolism.

6. The engorgement of the embolic parts is produced not only by the retrogressive venous current, but also by the retrogressive current in the branches of the plugged artery, and by the successive admission of the blood from the domain of collateral fluxion into the capillaries of the parts affected by the embolus; consequently the engorgement is due to the entrance of the blood from all sides into the embolic domain.

7. The hæmorrhages occurring by diapedesis in the peripheric parts of the embolised domain are due to the changes produced by the interrupted circulation, and also to the increase of collateral pressure in the neighbouring parts.

8. The formation of embolic infarctus may be explained as follows: —Immediately after the complete plugging of a final artery the circulation ceases entirely in those parts wherein its branches are distributed, and also in the adjoining veins and capillaries. The embolised parts become pale, partly in consequence of the arrested blood supply, and partly through the tonic contraction of the vessels; the blood-pressure ceases completely in these parts, whilst it is increased in the adjoining parts, wherein arise collateral fluxion with acceleration of the blood-current, dilatation of the blood-vessels, and spotted hæmorrhages by diapedesis. Owing to the difference in the blood-pressure, the blood enters from all sides into the embolic parts,

and the pallor and emptiness of the blood-vessels give place in two or three days to hyperæmia with dilatation of all blood-vessels and complete stasis, and engorgement as a final result. In those parts where the blood enters immediately through the capillaries from the domain of collateral fluxion into that of the embolised district, hæmorrhages by diapedesis occur, the embolised parts become infarcted. These have then the appearance of a dark red wedge-like cone, which corresponds in size and shape to that of the whole affected embolised domain. At the same time necrotic changes take place in consequence of the arrested circulation, and on the third or fourth day hæmorrhages appear as a result of the necrosed condition of the walls of the vessels.—("Medizinische Neuigkeiten, Erlangen," 30th Sept., 1876, pp. 317-318.)

Clinical Medicine and Surgery.

Spasmodic Inspiration.—Dr. N. J. Bistroff communicates to the Medical Society of St. Petersburg the notes of a case of spasmodic inspiration in a girl, aged 9, who came under his observation at the Clinical Hospital for Children.

On admission, the patient presented the appearance of strong and healthy development, the thoracic and abdominal organs were all in a perfectly normal state, except the stomach, which acted irregularly, as she complained of pain in the epigastrium, of nausea, and of eructations. During an attack the following phenomena could be observed:—The diaphragm contracted with more frequency; with each inspiration the epigastrium visibly deepened, the number of respirations increased to 42 per minute, and the heart-beats to 100 per minute. The shape of the thorax changed and became wider, the shoulders more elevated, the neck shortened, all inspiratory muscles worked forcibly; the countenance changed in expression, the skin became pale, and the extremities cold. Duration of attack, twenty minutes or less. Auscultation of larynx and thorax disclosed no abnormal signs, although during an attack all bystanders could distinctly hear a noise resembling that of borborygmi, but more accentuated. It was interesting to observe the sudden arrest of the fit whenever solid or liquid food was given to swallow. The patient remained in the hospital from October 2nd, 1875, to January 4th, 1876, and during the first fortnight the attacks came on daily, and could not be controlled by any means. Oxygen inhalations gave slight relief, but had no effect in arresting the fits, and at times, notwithstanding the oxygen inhalations, the attacks became more violent. The internal administration of tinctura gelsemini semp. gradually moderated, and finally entirely arrested the attacks. She has never had any more attacks during the last twelve months after having left the hospital. During the debate on the paper, Dr. Stolnikoff remarked that in anæmic persons with excess of carbonic acid and deficiency of oxygen in the circulation of the stomach, such an attack may have originated; the introduction of food, by increasing the arterial blood supply to the stomach, could thus arrest the fit; and oxygen inhalations may have given relief in a similar way. Dr. Stroganoff thought an excess of extractive matter in the blood might have a similar effect as an excess of carbonic acid. Dr. Bistroff, in conclusion, said that neither theory clearly explained the observed phenomena.—("Medicinsky Vjestnik," No. 3, Jan. 22nd, 1877, pp. 29-30.)

Asthma Bronchiale Neurosum—The following communication, by Dr. Nicolai Brunner, on an affection of the nervus vagus, commonly called bronchial asthma, and the method of its treatment, are of sufficient interest to be fully translated from the Russian paper, as published in the "Sovremennaja Med., Warsaw," Nos. 1-4, 1877.

Four cases of asthma nervosum, says Brumer, gave me the opportunity of trying the effects of the galvanic current in this affection, and appear to me to be amongst the first, if not the very first successful cures, by galvanisation, of such a nervous disease.*

It is well known what a number of different remedies are generally tried in nervous asthma, and that they are but of a palliative value, and that the disease resists all means of permanent cure. It is, moreover, astounding that even in our most recent works on electro-therapeutics, written by thoroughly competent neuro-pathologists, nervous asthma is barely mentioned; and by most authors a short description is given of this affection, which is grouped amongst the diseases of the lungs and bronchial asthma. Of late the remedial means have been greatly strengthened by the discovery of chloral. But not one author has related a radical cure obtained with chloral. I believe that the first application of the continuous current has been successfully tried in the following cases:—

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* *Note by Reporter.*—It is certainly not the first, if amongst the first attempts of successfully treating nervous asthma by galvanism. Dr. Althaus, of London, reports (in his elaborate "Treatise on Medical Electricity," 2nd edit., London, 1870, p. 522,) two cases of true spasmodic asthma, for which he used the continuous current with excellent effects. Dr. Benedikt, of Vienna, mentions ("Electro-Therapie, Wien," 1868, p. 309,) a case of asthma treated by galvanisation with brilliant success. At the last annual meeting of the British Medical Association, in Manchester, I read a paper on the same subject, of which I give the following abstract, as copied from "British Medical Journal," Aug. 25th, 1877, p. 253; (full report, see "Brit. Med. Jour.," Sept. 15th, 1877, pp. 376, 377.)

"Cases of asthma nervosum successfully and permanently cured with arsenic inhalations and galvanisation of the pneumogastric nerves, by Adolphe Wahltuch, M.D. (Manchester.) Seven cases came under the author's observation within the last six years; four patients suffered from nervous asthma only, three also from frequent attacks of bronchitis catarrhalis; in one case, the father and sister were likewise subject to asthma. The treatment consisted in—(*a.*) Inhalations; twice a day the use of the spray of a solution of arsenical salts, such as the arseniate of potash, of soda, of ammonia in gradually increasing doses ($\frac{1}{6}$-$\frac{1}{2}$ grains); (*b.*) Galvanisation: the daily application of a continuous current (for five minutes, and gradually increasing the current from 5 to 30 small Smee's cells) to each of the nervi vagi separately.—1. A gentleman, aged 23, suffered nine years from asthma nervosum; under treatment six months; freedom from attacks five and a-half years. 2. A gentleman, aged 25, three years ill; treatment one month; no attack during now five years. 3. A gentleman, aged 38, one month ill; treatment one month; no attack since two years; 4. A lady, aged 23, father and sister suffering from asthmatic attacks; twelve years ill, five months under treatment, had no attack since a year. 5. A lady, aged 42, eight years ill, six months under treatment, no attack since eight months. 6. A lady, aged 33, a year ill, a fortnight under treatment, greatly benefited. 7. A lady, aged 37, fourteen years ill, one month under treatment, benefited. The last three patients were also subject to catarrhal bronchitis."—A. W.

1. In July, 1866, I was consulted by Mrs. O., aged 42, a mother of several healthy children, of a lymphatic constitution, and who suffered for some years from severe attacks of asthma. The attacks at first came on only during the winter months, and gradually became more frequent and independent of seasons or barometric conditions of the atmosphere. Every attack now lasts from one to two hours, and ends in distressing cough, with copious expectorations of thick phlegm. The attacks always appear suddenly, and at all times, but chiefly after dinner or in the night, and awake her from profoundest sleep. The attack begins with a feeling of weight on the chest, and a tickling sensation in the larynx, and in the fossa supra-sternalis; these are soon followed by a spasm in the neck and a want of air; the voice becomes subdued and accompanied by a slight whistling noise, and a choking sensation; the eyes are suffused with blood, the lips and face become bluish, the hands cold; the patient experiences the agony of death, gets hold with her hands of any surrounding object, tears the clothes, and finally is covered with a profuse and cold perspiration. After a quarter or half an hour succeeds a distressing cough, with copious thick expectoration, or another paroxysm, at times sharper than the first. In an hour, seldom sooner, she returns to her normal state, having previously expectorated large masses of thick mucus. At times the attacks are milder and of shorter duration, but they return frequently during the twenty-four hours.

The colour of her face is always bluish; the thorax is regularly shaped; percussion reveals nothing abnormal; auscultation detects feeble breathing, and in the finer bronchioli whistling râles. The size and position of the heart are normal, the cardiac sounds clear and distinct; there is a slight catarrhal state of the stomach. The diaphragm performs in the intervals between the attacks regular and voluminous movements, but during an attack the diaphragm always reaches a lower level, does not appear to contract, nor do the lower ribs show any activity.

From the account given by the patient, and guided by the results of examination and close observations of the paroxysms, I came to the conclusion that the cause of her distressing condition must be one of a nervous kind, and that I had before me a characteristic case of a neurosis of the pneumogastric nerve, generally termed asthma nervosum. Having tried many internal remedies, which rarely had a slight effect in alleviating the distressing symptoms, I decided to apply the continuous current, although galvanism had not to my knowledge yet been recommended for this disease by any writer on electro-therapeutics.

On the 18th of June, 1866, I applied the galvanic current (18 cells of Siemen's and Halske's battery) during the attack, to both nervi vagi alternately. The positive electrode (a wet sponge 1½ inch) I applied to the nape of the neck, and the negative electrode (an oblong wet sponge 1 by ½ inch) I placed in front along the nervus vagus, changing it from one side to the other. The patient complained of giddiness, and galvanisation had to be discontinued. Two days later, during an interval between the attacks, I used galvanism in a similar manner five minutes for each pneumogastric nerve, and during the operation the breathing became gradually deeper and easier; after the operation she coughed a good deal. On the following evening she had again an attack, but much milder and shorter than ever before. Galvanism was applied every other day till the twelfth day, when eight applications in all had given her perfect ease of breathing, and entire freedom of attack. This result is brilliant, as she never since has had any paroxysms of asthma.

2. My second case is that of a woman, aged 38, well built and of a lymphatic constitution, with regular catamenia, and who for some years in consequence of mental troubles suffered from attacks of difficult breathing, pains in the epigastrium, and choking sensation in the throat. On examination she presented a well-developed and oblong thorax, respiratory sounds full and clear, and free from râles in the intervals between the attacks; the limits of the heart normal, the cardiac sounds clear, the second sound more accentuated; liver normal; appetite and digestion good, inclined to costiveness.

During the attack the patient suffers great pain in the epigastrium, piercing through to the spine; all the cervical muscles are forcibly contracted, the face is blue, the lips tremble; there is a sensation of pressure and contraction in the throat; the intercostal spaces become slightly more marked although more convex; the hypochondria are prominent; the diaphragm sinks lower; on percussion the lungs appear more voluminous and prolonged: the contours of the heart become imperceptible; the cardiac sounds get weaker; the heart-beats at first diminished to 56 (normal 70), later on increase to 120 and more per minute. The normal number of respirations being 22, during the attack become more frequent and reach 40 and more per minute; later on they are difficult to count, the inspiration gradually becoming shorter, and the expiration longer; expiration consists of several abrupt dull coughing fits. There is general anxiety and feeling of distress, the face swollen and blue, the eyes protruding, and the nostrils wide open; the bluish tongue protrudes, a violent and dry cough apparently finishes the attack; but after two or three respirations, the attack returns with greater intensity, the whole body is covered with profuse perspiration, the extremities become cold, the pulse filiform, and finally, after a few deep sighs with whistling noise, a severe fit of coughing and sneezing, and at times vomiting, the whole attack ends.

During an attack I applied the primary induction current to both nervi phrenici with the object of exciting some forcible inspirations; a few minutes later, to ease the expiratory movements, I used a continuous current of 36 cells, the positive pole resting on the nuchal fossa of the neck, the negative electrode (a double one) on each side of the throat simultaneously acting upon both nervi vagi. Immediately on application of galvanism the heart-beats diminished, the pulse became perceptible, the air entered and passed freely through the air-tubes; the subsequent cough was very slight. The attack was entirely checked after seven minutes' galvanisation. The patient was then quite free from attacks for more than a week, when she felt an approaching paroxysm, which was easily subdued by the application of galvanism as before. Galvanisation then was repeated every other day during the following three weeks, and she has never had another attack of asthma, although three years have passed since the galvanic treatment.

3. The third case was that of a woman with emphysema and valvular cardiac disease, and who used to suffer from fits of suffocation; but these fits, after a few applications of the continuous current, entirely ceased.

4. The fourth case is that of a man, aged 42, who during the intervals of the attacks, enjoyed good health and ease of breathing, but was subject to frequent attacks of asthma with violent spasms of the stomach and intestines. These attacks were completely controlled by galvanisation, the number of attacks gradually diminished from fifteen a day, in a few days to two and only one a day.

These four cases of neurosis nervi vagi, in which all remedial means hitherto employed remained ineffective, are sufficient to illustrate the beneficial use of galvanism. In all the patients the attack was arrested at the time of application of the galvanic current; in three of them there was evidently a permanent cure of the asthmatic attacks. The reason why such cases have, to my knowledge, not yet been treated by galvanism is that the patients generally consult specialists for pulmonary affections, who never use electricity and exhaust the great store-house of the Materia Medica. My patients were of a humbler sphere, but those belonging to the upper classes of society are treated in the ordinary routine way by their medical attendants, who look with distrust upon electro-therapeutics. Perhaps the time may soon come when the knowledge of electro-therapeutics will be more popular, as such neuroses as described above, as well as others—cardialgia, enteralgia, and many more, will be effectually treated by galvanism.

Let us now consider the nature of the disease as illustrated by the four cases that came under my observation. Nervous asthma is generally classified amongst diseases of the respiratory organs, and is described as several distinct affections, such as asthma laryngeale, asthma bronchiale, asthma diaphragmaticum. The term asthma, although but the expression of a symptom in each of the three distinct divisions, has a different meaning. Thus, under asthma laryngeale the attacks of suffocation are believed to be dependent on the affection of the laryngeal nerve; and asthma diaphragmaticum is considered as an affection of the phrenic nerve; and lastly, asthma bronchiale not as in the two former instances by a paralytic state, but by an overstimulated condition of the nerve. But laryngeal asthma is not always of a paralytic nature, it may also result from stimulation of the superior laryngeal nerve, as shown in two of the cases mentioned by me, in which, in addition to the signs of irritation of the bronchial branches of the pneumogastric nerve, there were also evident symptoms of irritation of the superior laryngeal and even of the splanchnic nerves. Generally, irritation of the cardiac and splanchnic branches of the pneumogastric is evident in bronchial asthma. All the cases under my observation, likewise those described by others, confirm the fact that with the respiratory troubles are associated cardiac disorder, neuralgic spasms, and pain in the stomach. All my observations convince me that in nervous asthma the whole trunk of the pneumogastric nerve is in a state of irritation.

In patients suffering from unilateral disease of the thyroid gland, there are frequently, in consequence of pressure upon the pneumogastric nerve, attacks of suffocation with disturbance in the action of the heart and stomach. In such cases the latter disturbances are often more marked than the respiratory disorders. Such cases prove that there are generally observed disorders derived from the whole trunk of the pneumogastric nerves, and rarely disturbances of some of its branches only. Hence the success attending galvanisation of the pneumogastric is self-evident. The mode of treatment consists in sending the continuous current through the two nervi vagi, by placing the positive electrode to the neck near the issuing point of the nerve from the cranium, in order to include the more central part of the trunk. The current must be a gradually increasing and finally strong one—from five to twenty or thirty cells. The sudden closure of the circuit is unsafe, as it may be followed by cessation of the heart's action. It needs more precaution in the simultaneous application of the current to both nervi vagi. It is necessary to begin with a very feeble current and gradually and without disturbance to use it stronger; likewise, at the end of the operation, the current must be gradually lessened before the removal of the electrodes. The negative electrode must be placed on each side of the trachea below the larynx and near the external edge of the sterno-cleido-mastoid muscle, pushing this muscle outwards, and slightly pressing the sponge upon the skin. A slight trembling of the electrode, corresponding to the pulse-beat in the carotid artery, is an undoubted proof of the position of the electrode on the passage of the pneumogastric nerve, the latter being closely situated near the carotid artery.—("Sovrem. Med., Warsaw," 1877, Nos. 1, 2, 3, 4, pp. 8, 23, 38, 55.)

"*Insufficientia Valvulæ Tricuspidalis et Stenosis Ostii Venosi Dextri.*"—Dr. Girgensohn communicates a case of chronic cardiac affection as observed by him in the General Hospital of Riga. The patient, aged 62, a coachman, since early infancy has suffered from palpitatio cordis, short breathing, and dry cough; remembers when 8 or 10 years old having had some kind of eruptive fever with throat affection; he never had any other serious disease, but several accidents through falling from his horse, when he had four times luxation of the left arm, and two years ago a transversal fracture of the right patella. He never had rheumatism. He asked admission into the hospital, because his cough and dyspnœa had become very troublesome of late.

The patient is of middle stature, moderately nourished, muscles well developed, complexion dark; mucous membrane of lips and soft palate cyanotic with well marked bluish spots, which become much paler on compression. Thorax well built and symmetrical. Both fossæ supra-clavicularis present a pulsation synchronous with the pulse. On the fossæ as well as over all the other parts of the lungs, there is an even and sonorous percussion sound. On auscultation one can hear, in the apex of each lung a feeble vesicular breathing, and in the posterior pulmonary parts numerous large vesicular murmurs and râles. Cough very troublesome, sputa scanty and frothy; respiration 38-40 per minute. The apex-beat of the heart is, in the fifth intercostal space, 1½ centim. inwards from the mammillary line, feeble but distinct. The cardiac dulness is limited by a line which runs upwards from the spot of the apex-beat towards the insertion of the third left costal cartilage, then downwards across the sternum and along the upper edge of the fourth right rib, about 5 centim. from the right edge of the sternum, and finally 1½ centim. more outward and downward, forming a curve with an outward convexity, and ending in the hepatic region. On auscultation, over the mitral valve the first tone is feeble but clear, and the second strongly accentuated and accompanied by a slight blowing murmur; the pulmonary tones are dull, the second slightly accentuated; the aortic tones are clearer, the second being accompanied by a sound of shaving. Near the lower sternal edge, over the tricuspid, there is, in place of the first tone, a feeble systolic, and in place of the second tone a loud diastolic blowing murmur to the right of the sternum, the first becomes more distinct and the second less so, but both murmurs become of the same intensity and much clearer a little lower down along the fifth right rib, about 1 centim. distance from the right edge of the sternum; further on, the intensity diminishes, although these murmurs can be easily distinguished, even so far as the right axillary line. Both external jugular veins are much dilated and pulsate isochronously with the heart; in the right vein a recurrent wave can be perceived, but not in the left. On compression of the middle part of the jugular vein the pulsation increases in the central portion, but almost disappears in the peripheric portion; and the patient experiences during such compression great anxiety and pain. On auscultation of the jugulars, there is a loud blowing murmur in place of a first sound, and the second is very short and low. In both carotids, and also in the aorta abdominalis, there is also a feeble first, and a well-marked and strong second tone. All the arteries are rigid. The radial pulse is 92, moderately full and tense, with a remarkable ascending wave, and on both sides alike. The hepatic dulness extends in the mammary line—from the fifth intercostal space downwards to the costal arch; in the epigastrium the hepatic dulness ascends 4 centim. above it, and to the left to about 3 centim. distant from the left mammary line; in the situation of the enlarged left lobe of the liver, distinct pulsation may be noticed. The spleen extends 2 centim. higher in the axillary line. All the functions, except a feeble appetite, are normal; the urine of normal colour and quantity, and free from albumen.

The cough at first became easier, with an ipecacuanha mixture; but later on, and without any provocation, the cough got more violent, and the sputa presented small lumps of dark-red blood, mixed with white and frothy mucus; this was accompanied by an elevation of the hitherto normal temperature, 38·4° centigr. in the evening; but there was no chill. On the following day the temperature was normal, and the sputa never after presented any sanguinolent admixture. Four weeks later the patient had erysipelas, beginning about the nose, and spreading over the scalp of the head; two months later he had facial neuralgia, which soon subsided with the use of galvanism. After nine months' stay at the hospital he was discharged, apparently well, but with no change in the above described physical signs. The treatment chiefly consisted in nourishing diet and expectorants.

Remarks. — Taking into consideration the considerable dextral hypertrophy, the murmurs over the tricuspid, the pulsation of the jugulars and of the left hepatic lobe, and all the phenomena in the vascular system; also the absence of any signs of aneurism, there can be no doubt of its being a case of insufficiency of the tricuspid, with stenosis of the right ostium venosum. The fact of the patient having suffered since childhood from shortness of breath and palpitations of the heart, as well as the dilated veins in the mucous membrane of the lips and palate, point to the long duration of the affection and to the primary disease of the tricuspid valve. It is remarkable that his occupation as a coachman, which involved the above-mentioned accidents, allow him, up to the age of 62 years, to enjoy a comparatively good state of health; but this occupation compelled him to have little active and much passive exercise (driving, riding), and enabled him to spend most of his time in the open air. These circumstances, together with the compensatory cardiac hypertrophy, may perhaps account for his not having suffered great inconvenience from disturbances in the circulatory system.—("St. Petersb. Med. Wochensch.," No. 32, Oct., 1876.)

Sarcoma Pulmonum.—Dr. Hampeln, of Riga, communicates a case of pulmonary sarcoma, diagnosed during life. He says the fact is well known that sarcomata, and especially osteo-sarcomata, have a tendency to metastatic recurrences, and their re-appearance in the internal organs is generally ascertained only after death. The following case, therefore, deserves recording as one in which the correct diagnosis could be made during life. The patient, aged 19, of a weak constitution, suffered, when 16, from osteo-sarcoma in the left knee, for which an amputation was at that time successfully performed. He had a few months ago an attack of rheumatic fever, from which he recovered in eight days; but ten days later the fever returned, with pain in the left thorax, and hæmoptysis, and a week after he expectorated, with a choking sensation, a piece of solid matter, six lines long and two lines thick, and soon afterwards commenced to improve. A month later he again had hæmoptysis with pain in the right thorax, and expectorated a similar piece as before. This piece was egg-shaped, of a greyish-red colour, and of medullary consistency; hardened with diluted chromic acid, and examined with the microscope, it proved to be a round cellular sarcoma. He passed four other similar pieces, and died very soon. No post mortem could be obtained. — ("St. Petersb. Med. Wochensch.," No. 40, Dec., 1876.)

Empyema. — Dr. Eberman communicates to the Medical Society of St. Petersburg the following case:—

A. M., a cook, aged 27, married, of middle stature, gave birth to a healthy girl a year ago, and went to the Foundling Hospital as a wet-nurse. Four months later she got a cold, a cough with stitching pain in the left side, and febrile symptoms; this continued for three months without any amelioration; she got weaker, the dry cough and feverish state, with repeated chills, continued. She was at that time admitted as an in-patient into the City Infirmary. On examination of the chest a swelling of the size of a fist was detected below the left breast; the walls of the tumor were very thin, and presented the signs of an abscess. The latter was opened by an incision, and discharged four pints of pus. The diagnosis was empyema after chronic pleurisy; on auscultation there was found an absence of vesicular breathing behind from the spina scapula sinistræ downwards, and there was also dulness on percussion in the lateral and back parts of the left side of the thorax. The diagnosis was further confirmed by exploration of the cavity of the abscess, in which the finger could easily detect an opening leading into the thoracic cavity. On the following day the lungs began to expand, vesicular breathing became slightly audible in the back part of the thorax, but not in the lower parts. The feverish symptoms disappeared, but great weakness and anæmia continued. She was ordered quinine wine, nourishing diet, poultices, and the abscess to be washed out three times a day. A week after there was a stoppage of the discharge with renewed febrile condition, which soon subsided after an enlargement of the incised opening was effected The discharge came freely and gradually diminished, the breathing became easy, and the lower lobe of the lung commenced to expand, and to admit air during respiration; and ten weeks after her admission she was discharged from the Infirmary, when an examination gave the following result: slight scoliosis of the dorsal vertebræ to the right; flattening of the lower part of the left side of the thorax; the measurements of the two halves of the thorax showed an inch less in the left than in the right side. A firm cicatrix in the seventh intercostal space in the left mammary line. Apex cordis a little to the right in the fourth intercostal space; heart-beats irregular, at times intermittent; second sound followed by a bruit. Feeble vesicular breathing and slight dulness in the affected parts; breathing generally good, but slight dyspnœa after exertion or walking upstairs.

Dr. Eberman also mentioned another case of empyema in a boy aged 10 years, who made a complete recovery two months after the incision.—("Medicinsky Vjestnik," No. 16, April, 1877, p. 183.)

Fat-Embolism of the Pulmonary Artery after a Gun-shot Wound.—Dr. A. Boettcher gives an account of the following case:—

G. B., a student, was admitted 25th May, 1877, at 10 p.m. into the surgical ward of the Clinical Hospital at Dorpat. He suffered from a gun-shot wound in the left knee. The bullet was at once removed. On the following evening the wound had to be enlarged by incision, as there were signs of traumatic inflammation in the knee-joint. On the following day, at 2 p.m. the patient suddenly became worse and died from collapse, just forty hours after the extraction of the bullet.

At a post mortem examination made twenty-seven hours after death, no other peculiar changes were detected except abundance of sub-cutaneous adipose tissue and pulmonary congestion and œdema. A microscopic examination of the lung-tissue showed the smaller pulmonary vessels over-filled with blood intermixed with a considerable quantity of oily fat. This caused fat-embolism of the pulmonary arteries, which resulted in hyperæmia and serous exudation into the lungs. On further investigation fat was found in the blood of the left vena cruralis, and also in the cardiac cavities. The fat could have found its way into the circulation from the infiltrated fatty tissue of the wound in the knee, or from the medullary part of the tibia, the bullet having passed through the knee into the caput tibiæ.

Dr. Boettcher next considers the chief points of interest in connection with this case, viz.:—

1. The very acute course of the embolic affection. The sudden appearance of dangerous symptoms, which ended fatally within two hours. This fact is in accordance with the experimental effects of injections of large quantities of oily fat into the circulatory system (Bergmann).

2. The large masses of fat found in the vena cruralis, likewise the presence of fatty globules in the cardiac blood.

3. The disproportion which existed between the lesion in the bone and the large masses of fat accumulated in the blood of the vena cruralis. It is probable that, besides the lesion in the bone, the thick layer of subcutaneous adipose tissue may account for the abundance of fat in the crural vein and the subsequent embolism of the pulmonary arteries.

4. The microscopic condition of the lung-tissue, which corresponded with the description generally given of fat-embolism of the pulmonary arteries. The capillaries were filled with more or less elongated fatty cylinders, and also with rows of oily globules. Dichotomous subdivisions of the fat-emboli frequently could be noticed. Besides the capillaries, the larger vascular branches were also plugged; the lumen, however, appeared not quite filled, but often merely narrowed by a hollow fat-cylinder adjacent to the wall of the vessel. In those sections of the lung that were soaked in frothy and sanguinolent exudation, the vessels contained blood free from any fat. The anterior edges of the lungs were not congested, but within their pale parenchyma numerous and branched fat-cylinders could be seen in the blood-vessels.—("Dorpater Medicinische Zeitschrift," Bd. vi., Heft iii. and iv., 1877, pp. 326-338.)

Extirpation of the Larynx.—Professor Kossinksy lately performed the successful operation of complete extirpation of the larynx in a patient at the St. Jesus Hospital in Warsaw. An artificial larynx, made of gutta-percha, replaced the natural larynx, and the patient is in a very satisfactory condition.—("Sovremennaja Medicina, Warsaw," 1877, No. 11, p. 174.)

Sudden Death after Thoracentesis.—The editor of the "Sovremennaja Medicina," Professor A. Walter, of Warsaw, considers the circumstances which may account for sudden death after the operation of thoracentesis for pleuritic effusions. Death may occur from (*a*) paralysis of the heart; (*b*) œdema of the lungs; (*c*) embolism in the brain.

1. Paralysis of the heart occurs whenever this organ is in a weak state, either from fatty degeneration or long displacement and compression by the pleuritic fluid, or suffering from mal-nutrition, owing to insufficient oxidation of the blood; and, lastly, from valvular disease. To the enfeebling causes may also be added the physical or moral shock as a consequence of dread of the operation. The action of the heart after an operation must be a powerful one, as with the escape of the fluid and the diminished pressure more arterial blood will pass to the heart from the lungs; the capillaries of the latter having been narrowed through compression before the operation, suddenly dilate, and allow more blood to pass through them. But if the heart is enfeebled, the increased action necessary after the operation is not forthcoming, and the patient dies from syncope.

2. Less frequent is death from œdema of the lungs. It occurs chiefly when there are numerous adhesions which do not allow the lungs to expand freely, and to receive the blood, which comes much quicker with the increased action of a healthy heart. More pressure is occasioned in the narrowed capillaries, and exudation takes place.

3. Very rare is death from embolism of the cerebral arteries.

In all cases of thoracentesis it is important to observe the following rules: The surrounding persons and relatives must be told that the operation is likely to succeed, but that occasionally sudden death may happen. The patient must during and after the operation be in a recumbent position, be kept very quiet, not fear the operation; the pleuritic fluid must be allowed gradually and slowly to escape, chiefly by aid of the elasticity of the thoracic walls and the expansion of the lungs, but never by an artificial pumping out of the cavity.—("Sovremennaja Medicina," No. 39, December, 1876, pp. 549-552.)

MATERIA MEDICA AND THERAPEUTICS.

Mercurial Treatment of Syphilitic Laryngitis.—Dr. D. Schulgovsky, at a meeting of the Petersburg Medical Society (Dec. 7th, 1876), declared that a general mercurial treatment has a rapid effect in hyperplastic laryngitis of syphilitic nature. He mentions a case of laryngo-stenosis with thickening and ulceration of the vocal cords and very painful and difficult deglutition, in which a week of general mercurial treatment sufficed to reduce the stenosis and to ameliorate the state of the cords.—("Medicinsky Vjestnik, Petersburg," No. 2, Jan., 1877, p. 18.)

Treatment of Pertussis.—(1.) Last autumn, during an epidemic of hooping-cough in Livonia, Dr. R. Otto experimentally tried the inhalations of salicylic acid vapour in seven cases, and feels encouraged to speak favourably of this method of treatment. The inhaling apparatus consisted of an ordinary flask of thin glass, with a large bowl, and provided with a perforated cork through which passed a bent glass tube, the shorter branch of the tube just entering the bottle, and the longer outside, drawn into a narrow neck with a small aperture. Half of the bottle was filled with a 2 per cent. solution of salicylic acid in water; the flask was heated with a spirit lamp, and the children were ordered to inhale the vapour once or twice a day during five minutes. The treatment continued from 5 to 17 days; the patients gradually got better; the number of paroxyms steadily and daily diminished and entirely disappeared.—("St. Petersburg. Med. Wochensch.," Nos. 22 and 23, May and June, 1877.)

2. Dr. Sawarowsky used with excellent results the following treatment in cases of hooping-cough: a few drops of nitrite of amyl are diluted with a drachm of chloroform; during each attack the patient inhales this mixture contained in a small glass. For internal administration during three days the following powder is ordered to be taken every two hours: ℞ Argenti cyanati gr. $\frac{1}{12}$, argyllæ puræ gr. 3. Misce fiat pulvis. Hot beverages, as well as hot food, have to be avoided. With this treatment even obstinate cases of hooping-cough are cured in a few days; and in exceptional cases there remains a very mild bronchial catarrh, with easy expectoration and with no spasmodic cough.—("St. Petersburger Medicin. Wochenschrift," 1876, No. 29.)

3. Dr. Lasinsky recommends in hooping-cough the insufflation with a powder of which he gives the formula: ℞ Quiniæ muriatis gr. 16, acidi salicylici gr. 32, sacchari albi, sodæ bicarbonatis aa. gr. 8, M. fiat pulvis. Divide in xx. partes æqualis, one part to be used twice a day for insufflation into the throat. He found this treatment entirely arrested the disease in eight to thirty days.—("St. Petersburger Medicin. Wochenschrift," No. 12, March, 1877, p. 101.)

Nitrite of Amyl in Carbonic-Oxide Poisoning.—Dr. J. Maximovitsch, of Kieff, found great benefit from the inhalation of a few drops of amyl-nitrite on wadding, in five cases of syncope caused by poisoning with carbonic-oxide gas.—("St. Petersb. Med. Wochensch.," No. 11, Mar., 1877, p. 92.)

Carbolic Acid Spray in Catarrhal Affections of the Respiratory Organs.—Dr. E. Moritz makes the following communication before a meeting of the St. Petersburg Medical Society, held September 21st, 1876. Last spring Dr. Moritz had frequent opportunities of trying the good effects of the carbolic acid spray in various respiratory catarrhs. He also observed, in his own case, that whilst previously subject to frequent bronchial catarrhs during the last few years, in which he had occasion daily to breathe the carbolic acid spray employed by him for the treatment of wounds at the hospital, he had been either entirely free, or suffered only in a slight degree. A similar statement he had from his colleague, Dr. Assendelfft. He tried the spray (using a 2 per cent. solution of carbolic acid) developed in the patient's room day and night. The first use of this treatment he made in two children, with early hooping-cough, which was greatly relieved in two days, and in a few days more entirely ceased. In a group of children with measles, the cough generally became very slight, and the night's rest secured. Phthisical patients did not stand the spray inhalations.—("St. Petersb. Med. Wochensch," No. 35, October, 1876.)

At a meeting of the Medical Society of St. Petersburg, held November 8th, 1876, Dr. Moritz read an elaborate paper on the same subject, an abstract of which here follows:

Catarrhal affections are more frequent, in relation to the geographical position, the nearer we approach to the polar region. St. Petersburg, therefore, is a favoured city with regard to these affections. During certain seasons coryza and cough become general, and many people pay little attention to catarrhal affections. But we must not forget how many, predisposed to phthisis, become thus affected after a simple catarrh, and how the development of phthisis may be prevented by promptly arresting a catarrhal attack. Dr. Moritz further draws a parallel between the treatment of wounds and catarrhal affections of the respiratory organs. In both it is necessary to provide pure air, or to exclude, by antiseptic means, the foul air. In the treatment of respiratory catarrhs, Dr. Moritz recommends pure air (where it can be obtained, sea or mountain air, and if not, a thorough ventilation of the rooms, and out-door exercise), deep inspiratory movements, and to fill the room with carbolic acid spray. At the same time other internal remedies may also be administered, such as muriate of ammonia, muriate of soda, bicarbonate of soda, ipecacuanha, tartrate of antimony, skin-excitation, and others. Dr. Moritz adopted this treatment in fifty cases of children, and found the most beneficial effects in cases of recent acute catarrhs, such as coryza, pharyngitis acuta, influenza, pertussis and measles.—("St. Petersb. Med. Wochensch.," No. 39, Nov. 27th, 1876.)

Treatment of Pulmonary Consumption.—Dr. Brugelman distinguishes between pulmonary phthisis and tuberculosis. Phthisis pulmonum may exist in one of the three varieties:

1. Simple catarrhal inflammation of the mucous membrane.
2. Purulent inflammation of the larynx, which gradually extends to the lungs.
3. Pus-formation within the lung-tissue, and its extension to the respiratory tubes.

Tuberculosis (miliary tubercles) is understood to be a self-infection, *i.e.*, morbid particles of any part of the body happen to enter the blood, act like a ferment upon the sanguineous fluid, and become rapidly increased and deposited in various organs of the body. This may also happen in phthisis when the pus infects the blood and reproduces miliary tubercles.

Phthisical patients may be cured if not far advanced in waste of the tissues and before any tubercles are deposited. But the formation of miliary tubercles rapidly destroys life.

The treatment of phthisis should consist in:—

(*a*.) Ordering the patient to breathe pure air in an even atmosphere, free from moisture and of any dust particles. The rooms inhabited by him must be well ventilated, all accumulation of impurities in the air must be avoided; he should have moderate outdoor exercise at certain times in the day and in favourable weather; in the evening a quiet nook in the room with exclusion from any exciting stimuli for body or mind.

(*b*.) Medical gymnastics with the object of developing the thorax.

(*c*.) Prevention of colds:—

(α.) Every morning to sponge the chest, neck, and arms with salt water, as cold sponging makes one less liable to atmospheric changes, and salt stimulates the function of the skin.

(β.) To wear flannel vests without sleeves; to avoid all kinds of chest-preservers, comforters or mufflers; to wear woollen socks, and frequently to change them; also to have strong boots, impermeable to any moisture.

(γ.) To wash the head daily with a lotion made of castor oil and spirits of wine, which frees the scalp from scales and prevents getting colds.

(*d*.) The patient having for some time fulfilled the above-mentioned regulations and derived benefit therefrom, should become used to sleep with the window open, whenever the temperature is moderate, as the night air has an invigorating effect upon phthisical persons.

(*e*.) Hygiene and dietetics: food, occupation, medicine, mineral waters, etc.—Whenever there is a feverish state, all fatty substances or eggs, and even meat should be avoided; but in case of absence of febrile symptoms, these substances are the most beneficial articles of diet, and should be given plentifully. Wine is good in all cases—as a tonic, as a cardiac stimulant, and as a reducer of temperature. Milk is likewise beneficial in all cases. Tea and coffee must not be allowed. At bedtime a plate of soup or beef tea often prevents night-cough and sleeplessness; tepid baths should be taken to prevent night-sweats. Sluggish bowels predispose to hæmoptysis, and in such cases aperient mineral waters are very appropriate, as they improve the digestion, regulate the bowels, and also appease the cough. Mineral waters, such as Arminiusquelle (Lippspringe) or Ottilienquelle (Inselbad) may be taken as a beverage, and also can be used for vapour inhalations.—("Sdorovie" (Health), No. 46, Sept., 1876, pp. 378, 380.)

Chromic Acid in Syphilitic Affections of the Mouth and Larynx.—Dr. A. Pospeloff ("Mosk. Med. Gaz.," No. 40, 1876,) has obtained rapid cures in syphilitic condylomata or other epithelial excrescences of the mucous membrane of the mouth or larynx by the topical application of chromic acid solution. He uses a solution of twenty grains in half an ounce of water for the mouth, and a weaker solution of six to ten grains in half an ounce of water for the larynx.—("St. Petersb. Med. Wochensch.," No. 42, 18th Dec., 1876.)

Electro-therapeutics in Throat Affections.—Dr. Jaschtschenko, of Moscow, reports four hundred cases of catarrhal angina in which he applied the galvanic current externally to the throat, and always found the patients speedily relieved, especially when he used strong currents, commencing with a weak current and gradually increasing it. He describes a case of catarrhal angina in which he saw a very striking and good effect from the use of the interrupted current, both electrodes having been applied successively to the right and then to the left side of the throat; the application lasted till all pain subsided (about half an hour), after which faradisation was continued a little longer to prevent a return of the angina; immediately after faradisation the headache disappeared. Towards night the febrile state subsided, and on the following morning no trace of redness or swelling could be detected. In slight cases of diphtheria, in parotitis (mumps), and in pharyngeal abscesses the electro-therapeutic cure was likewise successful. Galvanisation was applied soon after the pharynx had been touched up with a solution of nitrate of silver, and it was remarkable how rapidly the metallic taste disappeared.—("St. Petersb. Med. Wochensch.," No. 14, April, 1877, pp. 114, 115.)

Hydro-therapeutics in Pulmonary Phthisis.—Dr. Sokolowsky ("Bulletin General de Thérapie," 30th April, 1877,) from personal observations, speaks favourably of the effects of hydropathy in pulmonary consumption. The observations were made on 105 patients, which Sokolowsky considers in two distinct groups:—

(*a.*) Sixty-six cases with tubercular infiltration of one or both lungs, apex-catarrh and hereditary predisposition.

(*b.*) Nineteen cases of infiltration with no other pulmonary signs and general good health; also cases with caverns, but satisfactory general state.

The treatment with the cold douche applied from six weeks to six months gave the following results:—39 cured, 34 ameliorated, 19 slightly improved, 7 stationary, 3 worse, 4 dead. In all the thirty-nine cured cases at the end of the treatment, appetite and strength improved, and the weight of the body increased; all the physical signs disappeared, and though in some of these cases a slight diminution in the resonance, with prolonged respiration remained, these symptoms could be attributed to pleuritic adhesions, which invariably are present in apex affections. All these thirty-nine cases belonged to the first group.

The general good effects of the hydropathic treatment may be summed up as follows:

1. The cold douche acts upon the capillaries and causes them to contract and to expand more rapidly.

2, The cutaneous respiration becomes more energetic.

3. Nutrition gets more active, and the general state becomes greatly improved.

In healthy individuals the contractions and dilatations of the capillaries are very rapid, which is not the case in phthisical patients, owing to a slow state of nutrition. The exchange of gases in the skin in normal conditions is very insignificant, whilst in phthisis the deficient action of the lungs must be compensated by the skin; and in stimulating the cutaneous function the pulmonary insufficiency thus becomes supplemented.

Hydropathy may be recommended:

(*a.*) In all persons with phthisical predisposition, namely those born from phthisical parents, and whose respiratory mucous membranes are easily affected by colds; or who already suffer from primary catarrh of the pulmonary apex, bronchial catarrh, or chlorosis.

(*b.*) In cases of acquired phthisis with a satisfactory state of the general health, namely, such as suffer from limited infiltration with no febrile symptoms.

Hæmoptysis should not be considered as a contra-indication to the hydropathic treatment, although, *à priori*, one might suppose that with the contraction of the peripheric capillaries, the blood would flow more forcibly towards the lungs, where the blood-vessels offer less resistance; but the observations of Sokolowsky give a different result. Amongst the 105 cases, 47 had slight and 27 had considerable hæmoptysis before the application of the douche; of these 74 cases, during the treatment only 14 had blood-spittings, one of which occurred soon after a douche application.—("Annali Universali di Medicina," Parte Rivista, May, 1877, pp. 413-415.)

HYGIENE.

Influence of School Life upon the Development of the Chest.—Before a meeting of the Medical Society of St. Petersburg, held in March, 1877, Professor Lessgaft communicated the results of his observations on the influence of school life upon the thoracic development. As a normal condition of a sound thorax, the measure is taken of the width of the thorax at the level of the nipples, which ought to exceed the measure of the half-length of the whole body of the examined individual. In young persons aged 18, in England, the best results have been obtained; the measure-figure being + 3, *i. e.*, the width of the thorax exceeded by three units (inches ?) the half-length of the body; in the St. Petersburg gymnasium (grammar-school) the measure-figure was + 1·1, and in other public schools it was—1; the measure-figure of pupils entering the school at the age of ten being higher both in Russia and in England, though in England the thorax of children at the age of ten is better developed than in children of the same age in St. Petersburg.

Professor Lessgaft further noticed in 52 out of 355 pupils an accentuation of the second cardiac sound, which points to some impediment in the lesser circulation. In the same individuals he found an irritable and restless general disposition. In recommending gymnastics for such pupils Lessgaft is in favour of free exercises unaided by apparatus.—("Medicinsky Vjestnik," No. 9, 1877, p. 100.)

Amount of Air in School-rooms.—The editor of the journal "Sdorovie" (Health) refers, in a leader, to the deficiency of air in the Russian schools. In comparing the amount of carbonic acid gas exhaled by children, between 9 and 10 years of age, and adults aged 35, the difference is not great; but it is very striking when compared between a youth of 16 and an adult of 35. The observations of Andral, Gavarre, and Lehmann, show that the amount of carbonic acid gas exhaled in an hour varies at different ages, viz., children (9-10 years), 19 to 20 grammes; youths (16 years), 34 grammes; adults (35 years), 22 grammes. Pettenkofer found the amount of carbonic acid gas to be:

(*a.*) His own sitting-room, after a few hours' presence of several persons—0·60 to 0·80 per mille.

(*b.*) A badly-ventilated workshop—1·97 per mille.

(*c.*) A bedroom (in the morning)—2·3 per mille.

(*d.*) A school-room with 4 cubic metres of air per person, and two hours' presence of 70 pupils—CO_2=7·2 per mille.

Ortell found, in colleges—CO_2=5·5 per mille: and

Baring found, in national schools—CO_2=9 to 12 per mille.

The amount of air necessary in school-rooms is much higher than is generally thought. Dr. Guschin found the air, in schools erected by the Russian Philanthropic Society, to be only 1 cubic metre per person. Baginsky, of Berlin, in his recent publication "On School-Hygiene," found, in Prussian schools, frequently 1·2 cubic metres of air for each pupil. Redgrave, factory inspector in England, remarks, in his report for 1875, that schools with even as much as 6·2 cubic metres per pupil must be proclaimed as unhealthy. In France the schools and colleges visited by Vernois provide about 15 cubic metres per pupil. Moren, a French authority on ventilation, says that schools ought to have 15 to 20 cubic metres per pupil. The new schools erected lately in Prussia give 25 cubic metres of air per individual.—("Sdorovie." (Health), No. 60, April, 1877, pp. 117-119.)

UNITED STATES OF AMERICA.

(*Report by* Charles Meymott Tidy, M.B., etc., etc., *Assistant Editor.*)

Dr. Roberts Bartholow communicates a paper on *The Treatment of certain forms of Phthisis Pulmonalis by rest and by the internal administration of Atropia.*

1. Dr. Bartholow insists that exercise to a patient suffering from a disease specially marked by active tissue-waste is contra-indicated. In favour of *rest* he argues that, on physiological grounds, active exercise is hurtful in cases of phthisis where there is any considerable amount of fever, whilst repose of body and quiet of mind are essential points of curative treatment. That in chronic cases, with limited lesion and with consequently slight fever, *moderate* exercise may be serviceable so far as it aids appetite and digestion, but that this exercise must be strictly moderate, of short duration, and taken when the body is fever-free.

Dr. Bartholow gives the following as the summary of his advice to patients respecting exercise:—"The amount and kind of exercise must depend on two factors—the range of temperature and the condition of the digestive organs. If there is considerable elevation of the body-heat, if digestion is feeble, especially if diarrhœa exists, no exercise should be taken, except, it may be, the most moderate walking about the house or room. If the fever is slight and the digestion good, moderate walking may be permitted, and the proper time for this exercise is about three hours after meals, when the peptones are about to enter the blood, oxygen being then needed to perfect the changes. All phthisical patients should sit in the sunshine and breathe the out-door air a considerable part of each day, properly clad in cold weather."

2. On a second point Dr. Bartholow speaks strongly. He claims priority over Dr. Ringer and Dr. Fothergill for suggesting the utility of atropia in arresting the sweats of phthisis. One-sixtieth of a grain at bed-time generally suffices for this purpose. But he considers that atropia does more than this, and that the general benefit derived from its administration is considerable. In proof of this a series of cases is recorded. Inasmuch as the susceptibility to the action of this agent varies in different individuals, no inflexible rule as regards the dose can be made. Dr. Bartholow usually administers

about $\frac{1}{400}$th of a grain (five minims of a solution of one grain to the ounce of water) two or three times a day. As the effects of atropia are very persistent, he considers that usually two doses *per diem* will suffice to maintain a constant physiological action. If the quantity be so large as to produce great dryness of the mouth, retention of urine, and serious disturbances of vision, the patient may refuse to continue it. Moreover, large medicinal doses, although entirely safe, may cause irregular action of the heart. He considers, moreover, that the persistent daily use of moderate doses is preferable to the occasional administration of large doses.

"When the cough is troublesome, morphia may be combined with the atropia. When vomiting occurs, strychnia may be given in the same prescription. When indicated, the alkaloids, strychnia, atropia, and morphia may be dissolved in diluted muriatic acid instead of distilled water."—("American Journal of the Medical Sciences," April, 1877.)

Case of Phthisis with a Vomica communicating with a Gaseous Tumour on the Anterior Aspect of the Chest.—Dr. Lippencott records a case of a male, aged 57, phthisical, but with a good family history, who was found to have a large and increasing but non-crepitating and circumscribed swelling at the upper part of the right chest, 5½ inches in diameter, projecting about 2 inches at its centre, and extending from the lower border of the clavicle downwards, and from the right margin of the sternum outwards. Physical examination (as far as was possible, on account of the pain) demonstrated the existence of a large superficial cavity, and indicated that the upper part of the left lung was invaded. After a course of treatment for the purpose merely of amending the man's general health, the tumour was punctured, an aspirator being used, when a quantity of inodorous gas escaped; great relief ensued. After the operation it was evident that the pectoral muscles were atrophied, probably by the pressure exerted by the contents of the tumour, that the vomica extended from just below the clavicle to the upper margin of the third rib. It was, moreover, clear, at this period in the history of the case, that the pulmonary cavity communicated with the extra-thoracic collection of air through an opening in an intercostal space; this was proved by the facts that the tumour was directly over the vomica, that after tapping it was reproduced by violent coughing, that on pressure it could be made to disappear, and that on applying the ear to the chest in a certain region and simultaneously making pressure, the peculiar sound of the air passing into the vomica could be distinctly heard. A few days after this the secretions of the vomica (a cupful in quantity) were suddenly discharged through the intercostal opening, thus clearly indicating that the vomica in the lung communicated with the external air, through what is to be regarded as an abscess in the thoracic wall. Dr. Lippencott proposed enlarging the external opening and syringing out the vomica. This is as far as the case is recorded.—("Philadelphia Medical Times," October 28, 1876.)

Syphilitic Affections of the Lung.—Dr. Tiffany records five cases of syphilis, as shown by visceral lesion generally, which present a diseased condition of lung similar to one another, but different from the usual run of pulmonary pathology. He concludes that—

1. There may occur in the syphilized human being, coincident with the period of gummy deposits, a peculiar grey, gummy infiltration of the lung.
2. This infiltration is situated by preference near the middle rather than the base or apex of the lung.
3. The tendency of the infiltrated part is to break down irregularly, producing a rugged cavity.
4. The infiltration may exceptionally cicatrize.
5. The course pursued by the infiltration is influenced by antisyphilitic treatment.
6. Notwithstanding the formation of cavities, etc., pleuritic adhesions are rare.—("American Journal of the Medical Sciences," July, 1877.)

The Antipyretic Treatment of Pneumonia.—Dr. S. E. James gives a series of cases of pneumonia occurring amongst the inmates of the Kentucky Penitentiary, treated with the cold bath, quinine and salicylic acid. As regards the cold bath, Dr. James mentions that the exhaustion consequent on moving the patient from bed to bath and from bath to bed, is a serious objection to its use. Hence the patient should have a tablespoonful of brandy just before and after its administration. In the cases quoted it was only administered when the temperature exceeded 103·5 Fahr.

Quinine, Dr. James regards as indispensable. Dr. James advises 30 grain doses at intervals of twenty-four hours.

Of the eighteen cases treated with the cold bath, three (= 17 per cent.) died. One of these was a case of double pneumonia; another, of pneumonia of the apex, with delirium; and the third was a case marked by a very high temperature. Of the ten cases treated with quinine, two died. One of these had pneumonia of the apex, and the other occurred in an old man.—("Amer. Jour. of the Med. Sciences," July, 1877.)

Aspiration in the Treatment of Pleural Effusion.—Dr. Pepper records a case of a man, aged 24, suffering from empyema with pneumothorax complicated with tuberculosis, in which, on account of severe dyspnœa and cardiac disturbance, the aspirator was used, and 84 ounces of pus drawn off. Relief was afforded by the operation, but the lung did not expand, and although no air was admitted by the operation, the pus was replaced by air or gas, as proved by the physical signs. The pus reaccumulated, the aspirator was again used, but death resulted within three months of the first operation. Respecting the source of the gas after the operation, Dr. Pepper remarks that—"The occurrence of putrefaction in a pleural effusion, with the development of gas, without any communication with the air, may perhaps be admitted as possible, but is at least so rare an event that it is safer to assume in any given case, as in the present, that the gas has been admitted to the pleural sac from without. The only way in which this could be effected here was by perforation of the pulmonary pleura. In order to arrive at a correct idea of how this occurred, it is ncessary to turn to the history of the case, as well as to bear in mind the existence of a large empyema when the patient first came under notice. The family predisposition to phthisis, the occurrence of dry hacking cough continuing for several months, with gradual failure in health, naturally led to the suspicion that the attack began as one of phthisis of the left lung. The first thought—viz., that there had been a primary suppurative pleurisy which had led to perforation of the pulmonary pleura and to the development of pyo-pneumothorax—was disproved by the mode of attack, and in addition by the fact that at no time had there been such copious purulent expectoration as would have existed had free communication been established between a large empyema and the pulmonary tissue."

Dr. Pepper concludes his paper by remarking "that, in pyo-pneumothorax connected with pulmonary phthisis, paracentesis should not be performed unless the collection increases to such an extent as to cause imminent danger. The reasons of this are to be found in the essentially incurable nature of the primary lesion; in the impossibility of preventing a re-formation of the effusion; and, lastly, in the fact that when a lung, the seat of phthisis, becomes compressed by a pleural effusion, the progress of the pulmonary lesion is for the time usually checked."—("Philadelphia Med. Times," May 26, 1877.)

Dr. Edgar Holden describes a new instrument for physical diagnosis, which he calls a "*resonator.*"

It consists of a soft rubber tube with metallic end-pieces, and is thus described by the author:—"Material, soft rubber, one-sixteenth of an inch in thickness; internal diameter, one-half inch; length, seventeen inches and three-quarters. Distal end-piece of thin brass, three quarters of an inch in internal diameter, one-fortieth of an inch in thickness, and one and a-half inches long. Proximal end-piece (mouth-piece), of wood or metal. Same external diameter, and same internal *at its extremities*, but narrowed in its middle to five-sixteenths of an inch, and one inch and seven-eighths long. The mouth-piece of a trumpet would doubtless be better. A rushing noise is produced at the extremity of the tube when one makes forced inspiration or expiration through it. If the patient is made to respire through the tube, the ear of the physician being applied to the chest, and particularly in the supra-scapular space, this rushing sound is transmitted with clear, resonant volume. Disease, however slight, exaggerates the sound, alters the pitch, or changes it in proportion to the solidity of the conducting tissues." It is recommended to hold the free end away from the examiner so as to avoid distracting the attention, and to close the free ear with the hand. "A singularly magnified character is given to the respiratory murmurs, and the stethoscope is unnecessary." Five cases are briefly given, and the author sums up as follows: "It intensifies the sounds of vesicular dilatation, whether in a normal or morbid state. It intensifies the tubular sounds which, to the unassisted ear, are sometimes partially drowned by the neighbouring healthy murmurs, and it exaggerates to painful hoarseness the evidences of air in cavities."—("Boston Med. and Surg. Journ.," March, 1, 1877.)

Disease (Syphilitic) of Pericardium, Pleura and Peritoneum, Paracentesis of Chest and Abdomen.—Dr. Pepper describes a case of a male, aged 26, of irregular habits, admitted into the hospital suffering from over-distension of the abdomen, and effusion in the left pleural sac, thereby producing a great change in the position of the heart, the sounds being very indistinct. Paracentesis abdominis was performed with relief, 23½ pints of a straw-coloured fluid being drawn off. The effusion in the left chest having increased greatly, 8½ pints of amber-coloured fluid were drawn off with an aspirator, great relief being afforded by the operation, but the heart neither resumed its normal position nor did the sounds become more distinct. Five days after, aspiration was again performed, 18 ounces being removed, the abdomen was also tapped, 5½ pints only being drawn off this time. Within one month of the first operation, the patient died. At the post mortem "The right lung presented some thickening of pleura, with adhesions in points. On left side both layers of pleura were enormously thickened and matted together, so as to form a layer nearly half an inch thick. The pleural sac was thus obliterated, with the exception of two cavities in the substance of the thickened pleuræ. One of these, in the side, was capable of holding a pint, was lined with shreddy lymph, and was evidently the point from which the last accumulation of fluid had been drawn off. The other was small, with a capacity of about two fluid ounces, and was seated on the posterior surface of the lung. The left lung was compressed, but free from organic disease.

"The pericardial sac was obliterated, and the membrane enormously thickened. There had evidently been old pericarditis. The cardiac layer was encrusted with calcareous matter. Then came layers of organised lymph, and then the much thickened parietal layer. The left lung was closely adherent to the outer side of the pericardial sac.

"The liver was fatty and cirrhotic. There was old peri-hepatitis, affecting not only the convexity, which was covered with layers of false membrane, but the concavity, and especially the region about the transverse fissure, where dense thickening of the capsule and cellular tissue had occurred. It could not, however, be found that any actual compression of the vena cava had resulted. The walls of the gall-bladder were white, dense, and fibrous.

"The spleen was enlarged, its tissue firm; trabeculæ enlarged. Capsule presented marked localised peritonitis. The kidneys were in a state of albuminoid degeneration."—("Philadelphia Med. Times," May 26, 1877.)

Acute Bronchocele with Cardiac Hypertrophy occurring during Pregnancy, and producing Fatal Dyspnœa.—Dr. John B. Roberts, of the Pennsylvania Hospital, records the case of a woman, aged 27, where in the second month of pregnancy a bronchocele made its appearance, accompanied by severe palpitation. The swelling increased rapidly up to the sixth month of her pregnancy, when she came under observation. The right side of the thyroid gland was more particularly enlarged, and was about the size of a large hen's egg.

"The first sound of the heart seemed rather heavy, but there was no murmur. The patient's respiration was laboured, and three or four times daily the dyspnœa became so aggravated that she was almost asphyxiated. During these paroxysms, which lasted three or four hours, she presented a picture of the utmost distress; she screamed outright, threw her arms about, and struggled for breath, while the turgid veins of the neck, the streams of perspiration running down her cheeks, and the lividity of her countenance added to the horror of the spectacle. The paroxysms not unfrequently terminated by vomiting and, during them, she sometimes became delirious.

"Laryngotomy was performed, tracheotomy not being possible on account of the enlarged thyroid extending upwards over the trachea. Although this was done, and although the operator could force his finger into the windpipe, thus dispelling the idea of stenosis of the tracheal tube, the patient's respiration was still much embarrassed. She had no recurrence of the violent paroxysms, but continued to breathe with difficulty, and finally died January 1st, 1876, twenty-nine hours after the operation, or about fifty-five hours after admission into the hospital.

"The *autopsy* was made about sixteen hours after death. The lungs were not adherent, and presented evidences of slight congestion. The pericardium contained a large amount of effusion; the heart was greatly hypertrophied, weighing, without the contained clots, 20½ ounces, but there was no valvular insufficiency. The liver was normal. In the situation of the spleen there was found a small, hard, granular body, rather triangular in shape, and with what appeared to be a hilum. Its weight was 54½ grains. The supra-renal capsules were normal in size, but were somewhat hardened, and had indurated masses on the surface. The kidneys were of the natural size, and the capsules peeled off normally, but they were lobulated on the surface, and were somewhat congested.

"The tumour of the neck was found to be the thyroid gland, which was hypertrophied, and surrounded the trachea from its junction with the œsophagus on one side to a similar point on the other. The tumour at the sides reached as high as the top of the larynx, and with the enclosed trachea measured 8½ inches in circumference; the enlargement on the left side was about the same as on the right, though before death the tumour was more prominent on the right side. The isthmus was hypertrophied, and bulged forwards between the ribbon muscles of the neck. The tracheal wall was slightly pushed inward by the tumour on the left side. The incision made in the operation was about one inch long, and was found to extend obliquely through the left side of the thyroid down to the cricoid cartilage. Its upper part divided the two left vocal chords, and it extended beneath the enlarged thyroid isthmus. The tumour was a simple hypertrophy of the thyroid gland, and contained no cysts. The recurrent laryngeal nerves ran beneath the gland along the sides of the trachea, and the tumour had to be dissected up to expose them. The left nerve was smaller than the right. The bronchial glands also were enlarged."

The interest in this case is the termination of acute bronchocele with fatal dyspnœa.

Dr. Roberts gives two further cases; one in a man aged 40, and the other in a man aged 18, where suffocation resulted from bronchoceles. In the former case there was some ground to believe it to be hereditary. It made its appearance twenty-one months before it proved fatal. Hence this case may be regarded as the rapid development of an old bronchocele, but had only been painful for six months previous to death. The dyspnœa was severe for about four months before death.

In the second case the man noticed his collar was too tight about the middle of June. The next day he could not button his shirt. On July 5th he came to the hospital, when the tumour, evidently thyroidal, was the size of a cocoa-nut. There was no cardiac murmur. The dyspnœa became intense, and he died cyanozed on the 6th July. At the post mortem both lobes of the thyroid were found of very large size, soft, and lobulated. The gland weighed 4 lbs. This case was certainly one of *acute* bronchocele.—("American Journal of the Medical Sciences," October, 1876.)

Paracentesis of the Pericardium, with an analysis of 41 *cases;* by Dr. John B. Roberts, of the Pennsylvania Hospital.—In 15 out of 34 cases where the position of puncture is noted, it was at either the fourth or fifth interspace. The dangers from the operation are wounding the internal mammary artery, or striking the heart as it is thrown forward by the systole.

We print the table of the 41 cases in detail. (*See next page.*)

68 is the age of the oldest patient, and 6 the age of the youngest patient operated on.

Of the 41 cases, 19 recovered and 21 died (one case omitted), that is, 46·34 per cent. of the cases recovered, and 53·66 per cent. died.

Of the 21 deaths, 17 suffered from concomitant and incurable diseases.—("New York Med. Journ.," Dec., 1876.)

Fatal Embolism and Thrombosis of the Pulmonary Arteries.—Dr. Isaac S. Porter, of New London, records a case of fatal embolism in a man aged 61, robust, plethoric, and active. He was troubled with a bronchial cough, and with unusual weakness about a fortnight before his death. A sudden attack of faintness came on, the pulse being rapid, irregular, and scarcely perceptible, want of breath being the one thing complained of. He remained sensible to the end, complaining of no pain, death occurring half an hour after the first seizure.

The post mortem examination was made by Professor Fitz, whose report was as follows:—

"The examination of the organs sent me has proven satisfactory as to the cause of death, which was embolism and thrombosis of the pulmonary arteries.

"The left ventricle of the heart was moderately dilated and hypertrophied—this condition being evidently due to chronic changes of the aortic orifice resulting in insufficiency. The septum between two of the crescents had almost wholly disappeared, the corpora arantii of these were approximated, and the leaflets somewhat thickened and contracted. The appearance was thus presented as if but two semilunar valves of unequal size existed at the aortic opening.

"This condition gives the most probable explanation of the constant small and feeble pulse, as the appearance of the wall of the heart was not suggestive of any special degree of fatty degeneration.

"In one of the secondary branches of the pulmonary artery of the left lung, an adherent and slightly decolorised clot was found, which had probably been in position some days.

"From this a more recent coagulation extended towards the common pulmonary arteries of both lungs, and was continued into the main artery of the right lung, filling it and the primary branches.

"The arborescent clot was thus formed—its ends rounded and pointed passing from one inch and a-half to one inch into the primary s. Beyond its ends the blood was still fluid.

41 *Cases of Paracentesis Pericardii.*

OPERATOR.	Date.	Sex and Age.	Mode and Site of Operation.	Recovery.	Death.	Time Patient survived operation.	REMARKS.	Complication.	REFERENCE.
1. Romero.	Before 1819	M. 35	Bistoury and scissors. 5th interspace.	1					Dict. des Sciences Médicales, Paris, 1819, xl., 371.
2. Romero.	Do.	M. 37	Do.	1					Do.
3. Romero.	Do.	M. 45	Do.		1				Do.
4. Jowett.	1827	F. 14	Not stated.		?	Life prolonged.	Hope of recovery.		Günther, Blutigen Operationen, iv., 3, 102.
5. Karawagen.	1839	M.	Trocar. 5th interspace.	1			Hæmorrhagic scorbutic pericarditis. Drew off Oiijss. Quite well five months later.	Scurvy.	British and Foreign Medical Review, July, 1841.
6. Karawagen.	1839	M.	Do.?		1	Life was prolonged.	Scorbutic pericarditis.	Scurvy.	Do.
7. Schuh.	1840	F. 24	Trocar. 4th interspace.		1	160 days.	Tapped first in 3rd interspace. Case was one of encephaloid disease of thoracic viscera.	Cancer.	Archives Générales de Médecine, November, 1854.
8. Kyber.	1840	M.	Trocar.* 4th interspace.	1			Scorbutic pericarditis.	Scurvy.	Monthly Retrospect of Medical Sciences, Edinburgh, March, 1848, i., 35.
9. Heger.	1841	M. 19	Trocar. 5th interspace.		1	69 days.	Tapped twice. 1,500 grammes and 400 grammes. Drainage tube left in six hours.	Phthisis.	Archives Générales de Médecine, November, 1854.
10. Schönberg.	1842	M.	Trocar.	1			Hæmorrhagic effusion. Removed 5 lbs. Recovered in six weeks.	Scurvy?	Günther, Blutigen Operationen, iv., 3, 102.
11. Kyber.	1843	M.	Trocar. 4th interspace.	1			Scorbutic pericarditis. Was living 1½ years later.	Scurvy.	Do., and also Monthly Retrospect of Medical Sciences, Mar., 1848, i., p. 35.
12. Kyber.	1845	M.	Do.	1			Do.		Do.
13. Kyber.	1845	M.	Do.		1	17 days.	Tapped twice. Scorbutic pericarditis.	Scurvy.	Do.
14. Kyber.	184–	M.	Do.	1			Scorbutic pericarditis.	Scurvy.	Do.
15. J. C. Warren.	1852	F. 35	Incision and trocar. 6th interspace.	1			Removed f. oz. v. Left hospital in a few weeks.		H. H. Smith's Surgery, ii., 358.

* Sometimes Kyber adapted a syringe to the trocar.

41 *Cases of Paracentesis Pericardii.*

OPERATOR.	Date.	Sex and Age.	Mode and Site of Operation.	Recovery.	Death.	Time Patient survived operation.	REMARKS.	Complication.	REFERENCE.
16. Jobert.	1854	M. 16	Incision and trocar. 5th interspace.	1			Removed 400 grammes. Tapped pleura also for effusion. Under notice three months.	Phthisis.	Trousseau, Clinical Medicine, iii. 370.
17. Béhier.	1854	F. 22	Trocar. 6th interspace.		1	26 days.	Removed 250 grammes. Tapped previously in 7th interspace. No fluid obtained.	Died of pneumonia.	Archives Générales de Médecine, November, 1854.
18. Aran.	1855	M. 23	Incision and trocar. 5th interspace.	1			Tapped twice. F. oz. xxviij. and f. oz. xlix. Injected iodine and iodide of potassium.	Phthisis.	Trousseau, Clinical Medicine, iii., 386.
19. Aran.			Do.	1					Id., iii., 391.
20. Aran.			Not stated.	1					Id., iii., 391.
21. Bowditch.	1856		Incision.		1				Id., iii., 391.
22. Skoda.			Not stated.		1				Id., iii., 383.
23. Vernay.	1855	M. 23	Trocar. 5th interspace.		1	21 days.	Tapped twice. First, 500 grammes; second, 3 days later, 400 grammes. Tapped abdomen for ascites.	Valvular disease.	Half-Yearly Abstract of the Medical Sciences, xxv., p. 95.
24. Trousseau.	1856	M. 27	Incision.		1	5 days.	Removed f. oz. iij. Tapped pleura accidentally at same time.	Pleurisy & phthisis.	Trousseau, Clinical Medicine, iii., 364.
25. Wilezkowski.	1857				1	6 hours.	Hæmorrhagic pericarditis.	Scurvy?	Günther, Blutigen Operationen, iv., 3, 102.
26. Wheelhouse.	1866	M. 26	Trocar. 4th interspace.	1			Removed f. oz. iij. Living 23 months later. Acute rheumatic pericarditis.		British Medical Journal, October 10, 1868.
27. Roger.		F. 12	Trocar. 6th interspace.		1	1 day.	Removed 780 grammes.	Myocarditis & heart-clot	Boston Medical and Surgical Journal, 1869, p. 86.
28. Mader.	1868?	F. 68	Aspiration. 3rd interspace.		1	15 days.	Tapped twice. First, f. oz. ij. Second time at right of sternum.	Pleurisy.	Half-Yearly Abstract Medical Sciences, xlviii., p. 25.
29. Roger.	1868	F. 11	Trocar. 5th interspace.		1	30 days.	Tapped twice. First, 100 grammes blood; second time, 500 grammes serum.	Pulmonary disease.	Half-Yearly Abstract Medical Sciences, xlix., p. 79.
30. Teale.	1869	F. 27	Trocar. 4th interspace.		1	Few hours.	Tapped twice. Removed f. oz. v., and f. oz. vj.	Phthisis?	Lancet, June 12, 1869.

41 *Cases of Paracentesis Pericardii.*

OPERATOR.	Date,	Sex and Age.	Mode and Site of Operation.	Recovery.	Death.	Time Patient survived operation.	REMARKS.	Complication.	REFERENCE.
31. Duncan.		M. boy	Trocar.		1	Few hours.			Edinburgh Medical Journal, October, 1872, p. 376.
32. Champouillon.		M.		1			Complete cure (Roger).		Gazette Hebdom. de Méd. et de Chirur., Nov. 5, 1875.
33. Chairou.	1872	M. 23	Aspiration. 5th interspace.	1			1,000 grammes. Tapped pleura 1,430 grammes. Walked about and had recovered, but died in 49 days of diarrhœa and phthisis.	Diarrhœa and phthisis.	Do.
34. Maclaren.	1872	M. 27	Incision and trocar. 5th interspace.		1	6 days.	Removed f. oz. xxxv.	Pleurisy.	Edinburgh Medical Journal, June, 1872.
35. Heath.	1873	M. 6	Aspiration. 3rd interspace.		1	50 days.	Tapped pericardium twice. F. oz. iij¼ and f. oz. vj. Last time in 4th interspace. Tapped abdomen twice.	Phthisis & tubercular peritonitis.	Practitioner, xi., 265.
36. Saundby.	1874	M. 13	Aspiration. 4th interspace.		1	Few hours.	Removed pus f. oz. xxx; probably from rupture of pulmonary abscess.	Pleurisy and abscess of lung.	Edinburgh Medical Journal, March, 1875.
37. Gooch.	1874	M. 13	Aspiration. 5th interspace.		1	38 days.	Tapped six times. Purulent fluid. F. oz. xxj; f. oz. xxxv; f. oz. lx—iodine injected; f. oz. l—iodine; f. oz. xxx; f. oz. xx—iodine.	Peritonitis.	British Medical Journal, June 19, 1875.
38. Steele.	1874		Aspiration.	1			Acute rheumatic pericarditis.		British Medical Journal, October 24, 1874.
39. Bartleet.	1874	M. 20	Aspiration. 4th interspace.	1			Acute rheumatic pericarditis. Removed f. oz. xiv. Walking about in 27 days.		Lancet, December 19, 1874.
40. Elliott.	1875	M.	Aspiration. 5th interspace.	1			History of rheumatic attacks. Removed f. oz. xlij. Left hospital in 9 weeks as out-patient.		Lancet, January 8, 1876.
41. Nixon.	1876	M. 20	Aspiration. 5th interspace.		1	6 days.	Removed f. oz. iijss.	Pleurisy.	Dublin Journal of Medical Sciences, June 1, 1876.

"The *besoin de respirer* and the ability to inflate the lungs are thus quite compatible, the bronchiæ not being obstructed, but the blood not capable of aëration. Death is thus immediately produced by a lack of oxygenated arterial blood in the nervous centres, notably in the medulla oblongata.

"A certain degree of bronchitis existed, of no importance in respect to the sudden death. The heart did not indicate the seat of the original embolism, which may have been in the right side of the heart or in any of the body veins."—("Amer. Journ. of Med. Science," October, 1876.)

Fenestrated Pulmonary Valve Leaflets, and Peculiar Growth in Arc of the Tricuspid Valve Leaflets from a case of Phthisis.—Dr. Louis Starr records the case of a male, aged 31, suffering from phthisis, admitted as a patient at the Episcopal Hospital of Philadelphia, on July 6th, 1876. Cough and hæmoptysis commenced in the spring of 1874. Physical signs revealed a large cavity in the upper lobe of the left lung, whilst numerous moist crackling râles were heard over the lower lobe. The right lung was fairly healthy. The first sound of the heart was feeble, but there was no murmur to be detected. Death occurred in the October following. At the post mortem "the whole of the superior two-thirds of the upper lobe was found converted into a large cavity, lined with a smooth membrane, having extremely attenuated walls composed of a thin layer of condensed lung-tissue and the thickened pleura, and being in places, as over the anterior surface, scarcely two lines in thickness. In the lower third there were two cavities, each about the size of a walnut, having irregular walls, and surrounded by indurated pulmonary tissue. All of these cavities were partly filled with a purulent fluid. The lower lobe was indurated, contained numerous small cavities, isolated deposits of cheesy matter, and collections of miliary tubercles, and the bronchial tubes traversing it were dilated. At the apex of the right lung there was a moderately large anfractuous cavity, and throughout the remainder of the lung a number of the small masses of caseous material in various stages of degeneration. The heart was small and slightly flabby; there was no alteration in the relative size of its chambers, and the aortic and mitral valves were perfectly normal. The posterior and right leaflets of the pulmonary valve, however, were fenestrated; and attached to the auricular surface of the anterior leaflet of the tricuspid valve, at a short distance from its free margin, was a round, moderately firm, reddish-brown body, about the size of a pellet of No. 4 shot."—("Philadel. Med. Times," Jan. 6th, 1877.)

Anomalous Arrangement of Pulmonary Valves, four in number, and Fenestration of Pulmonary Leaflets (Dr. J. C. Wilson).—The specimen was taken at an autopsy on a middle-aged woman, and is thus described:—

"There are four semi-lunar valves at the orifice of the pulmonary artery, three of which are nearly or about the normal size. The fourth resembles the others closely in contour and formation, save that in all its measurements it is smaller, being both narrower and less deep, and is, so to say, crowded in between two of its fellows.

"The heart is hypertrophied, especially in the right side; the other valve-systems are normal. A point worthy of attention is the marked thinning of the pulmonary semilunar leaflets in the region known as the *lunula*, and in some of them the separation of the tendinous border of the valve, forming a slit-like opening or *fenestration*. This, viewed in connection with the right ventricular hypertrophy, and the fact that the right lung was so compressed by a vast pleural effusion of long duration as to form a small shrivelled mass, and so afforded great if not almost complete obstruction to its circulation, goes far to support the theory that such valve-fenestrations are due to long-continued, extensive arterial tension. They are encountered with great frequency in the aortic valves, but rarely in those of the pulmonary artery.

"The excess in the number of valves is a rare malformation."

There is no record of any symptoms that occurred during life.—("Philadelphia Medical Times," October 14th, 1876.)

Recovery in a Case of Embolism affecting the Right Lung and Kidney.—Dr. Cleland reports an interesting case in a lady, aged 50, suffering from inflammation of the internal saphenous vein. Suddenly intense pain in the mammary region, preventing anything but the shallowest breathing, set in. After twenty-four hours the pain shifted to the sub-clavicular space. This was again relieved. On neither occasion were there any physical signs on auscultation. After forty-eight hours' quiet, suddenly intense pain set in in the region of the right kidney. Ultimately she recovered perfectly. Dr. Cleland remarks:—

"The analysis of this case is an extremely interesting one. The thrombus of the saphenous vein was, doubtless, the origin of the difficulty. Detached portions of the plug found their way into the general circulation on three different occasions. The first and second, passing through the right side of the heart, were driven into the right pulmonary artery, becoming wedged in the capillaries of the lung. The second was driven into the renal vein of the right side, where it met with a similar fate in the capillaries of the kidney. The pain, sudden and intense, was a sequence of the lodgments of the clots and the malnutrition resulting therefrom; the weak, rapid, intermitting pulse; the profuse diaphoresis—in a word, the shock, a sequence of the pain and the presence of a foreign body in the circulation.

"The conservative powers of nature were beautifully illustrated in the establishment of hæmorrhage from the lung and kidney, which, relieving the congestions, doubtless also eliminated the foreign bodies from the blood."—("Detroit Medical Journal," April, 1877.)

Case of Intra-Cardiac Cyst, by Dr. Holden, of Newark.—This is a case where a free cyst, the size and shape of a large filbert, was removed from the left ventricle, where it lay entangled in the chordæ tendineæ. The ventricle itself was normal. A second cyst was found attached to the anterior aspect of the ventricle beneath the mitral valves. The following microscopical examination of these cysts is by Dr. George A. Van Wagenen.

"I have examined the small cyst from left ventricle of heart. The tissue composing its walls does not resemble that of a fully organized cystic tumour. I could find no epithelial or endothelial layer lining it, and no signs of blood-vessels. It consisted of a mass of small, round, ovate, and caudate granular cells, about the size of, and much like, pus-cells in general appearance. The whole seemed to be held together by a very delicate reticulum of fibrous tissue, which cropped out along the edges of the specimen. In some places organization had gone so far that the tissue was partly striated. The whole appearance resembles that which is found in a fibrinous clot undergoing some organization. I think it comes fairly under what Laennec has described as globular vegetations. There were a few fibres floating free, which I had torn from the edges of the specimen mounted.

"This typical instance of true globular vegetation in the ventricles gives us the following symptoms, viz.: Protracted functional derangement of the heart for a year, without murmur or impairment of rhythm or impulse, and attributed to strong tobacco; sudden syncope, and brief loss of sensation and motion; intensely rapid pulsation of the heart, with incapacity to maintain arterial and capillary circulation; cerebral anæmia and insomnia; frequent faintings, first upon slight motion, and later, without; remarkably low temperature; singularly unimpaired respiration-rate; sudden dropping of pulse-rate from above 200 to a normal state, both as to frequency, tension, and rhythm, and its continuance up to the hour of death; intense hyperæsthesia of the surface of the body; embolism of the popliteal artery, with death of the limb; clearness of intellect through all, till almost the last day; and, finally, paraplegia and death."—("American Journal of the Medical Sciences," October, 1876.)

Aortic Aneurism treated by Electrolysis by Dr. Homans, in a male, aged 50. It is described as an enormous aneurism of the arch of the aorta. The operations, however, entirely failed in effecting a cure. Five gilded needles, insulated to within ¼ of an inch of their points, were inserted into the sac. They were connected with the positive pole of a Stöhrer's battery, the negative pole being connected with a large metallic disc applied to the epigastric region, and moved about occasionally.

"The number of cells employed varied from eight to ten, which was all that the patient could bear without much pain.

"The needles were kept in the aneurism for forty minutes, but since, after a time, the skin around some of them became slightly discolored, either bluish or pale, and somewhat sunken over a circle about two millimetres in diameter, these were removed and fresh ones (of steel) were inserted at neighbouring points, ten punctures being made in all. Bubbles of gas and a little dark blood followed the needles as they were withdrawn."

The patient was bright and courageous during the operation, but after the needles were removed he became rather pale, and the extremities were cold. A cup of warm tea revived him, however. He stated that the insertion of the needles was the most painful part of the operation. The next day the pain through the back and down the arm was reported to be less than before the electrolysis. The tumour looked somewhat blue. On August 14th the patient reported that the pain above mentioned was very slight. His feet were still œdematous, and he complained of occasional dizziness. There was no albumen in the urine. On August 15th electrolysis was repeated; the tumour was then somewhat larger than when the patient entered the hospital.

"The second operation did not differ materially from the first, except that steel needles only, insulated as above mentioned, were used, and one or two of them were removed and were not replaced in the course of the operation. The depths at which the needles had been inserted measured from their points of junction with the skin, were found to be respectively two, one and a-half, one and one-fourth, one and three-fourths, and one and five-eighths inches.

"The insulation used consisted of several layers of a thin solution of shellac in alcohol, which was applied while the needles were as warm as the hand could bear, and this coating was found on the whole to work well, although on the withdrawal of some of the three-cornered needles it was found to have chipped off at a few points along their edges.

"The second operation was more painful than the first, the patient experiencing a burning sensation while the current was passing. On August 21st he left the hospital, convinced that his pain was less than when he entered. The tumour, however, was larger, and the impulse was about the same."—("Boston Medical and Surgical Journal," Nov. 16, 1876.)

Wounds of the Heart.—Dr. C. C. Yemans records a case of a male, aged 27, who stabbed himself over the region of the heart. Five minutes afterwards he was found cyanotic, comatose, and without appreciable heart-beat. Auscultation revealed hæmorrhage either from the lung or the heart into the pleural cavity. The following day his temperature was 103·7. He complained of no pain, and had not spat blood. He continued in much the same state until June 9th, ten days after the stabs, when he committed suicide by throwing himself down a distance of 50 feet.

At the post mortem, three wounds were found into the pleural cavity, each about half an inch in length. One wound had slightly injured the diaphragm. The pericardium had been cut in two places. There were two wounds in the heart, both on the left side, one of which completely cut through the ventricular wall.—("Detroit Med. Journ.," July, 1877.)

Croup and Diphtheria.—Dr. W. S. Stewart, in a paper on this subject, in which he states his conviction that the differential diagnosis is not so difficult as has been stated, gives the following as the chief points of dissimilarity:—

"Croup is ushered in by a cough.

Diphtheria by a chill.

Croup is most frequent when there is greater humidity in the atmosphere and the east wind is prevailing.

Diphtheria does not depend upon meteorological changes.

Croup is not contagious.

Diphtheria most decidedly is.

Croup comes on suddenly.

Diphtheria may be tardy.

Croup is recognised by the croaking sound.

Diphtheria is known by the patches of membrane on the throat.

Croup must be promptly relieved.

Diphtheria is tardy in its resolution.

Croup does not affect the system.

Diphtheria is very prostrating.

Croup occurs most frequently in childhood, and from two to five years.

Diphtheria occurs at all ages.

Croup is apt to occur very often in the same case.

Diphtheria may occur more than once in the same case, but the patient is not so liable to a second attack."

Further, he remarks that in croup the urine is not affected, whilst in diphtheria it becomes albuminous. In croup the blood is normal, save, perhaps, a slight increase of fibrine, and hence the exhalations are not offensive, whilst in diphtheria the blood contains abnormal matters (?), and hence the exhalations are offensive.

Dr. Stewart remarks that the diseases do not often occur in one person at the same time, but that they may do so, neither disease being sufficient in its alliance to the other to prevent an attack of both simultaneously. In proof, Dr. Stewart quotes a case of this kind which came under his own observation.

In the treatment Dr. Stewart considers that we have further proof of the dissimilarity of these diseases.

"In croup we must adopt prompt measures in the beginning of the disease.

In diphtheria it is not always evident in the first symptoms what the disease will be.

In croup emetics are indicated.

In diphtheria emetics are too prostrating.

In croup counter-irritants are very essential.

In diphtheria counter-irritants are of no avail.

In croup no topical applications need be made to the membrane.

In diphtheria mopping off the membrane is a necessity.

In croup expectorants are required.

In diphtheria they are not needed.

In croup depressants are given.

In diphtheria stimulants are required."—("Phil. Med. Times," Oct. 14th, 1876.)

Treatment of Pertussis.—Dr. P. Brynberg Porter strongly advocates the use of chloral hydrate in pertussis. He considers it not only alleviates the distressing symptoms to a marked extent, but also cuts short its duration. As regards the use of quinine (suggested by Dr. Dawson and Professor Binz) he had also obtained excellent results. The use of the fluid extract of castanea vesca, as suggested by Dr. T. D. Davis, was attended in some cases with successful results, whilst in others it proved useless.

Dr. Porter considers that when remedies are given early in the disease, the paroxysmal stage may be limited to about three weeks. He considered that castanea failed more often than chloral or quinine, but that in those cases in which it was really of benefit, its action seemed quite as efficient as that of either of the others. He considers that with three such excellent agents as castanea, quinine, and chloral, hooping-cough ought no longer to be considered such a formidable adversary as it has hitherto been; for if one medicine fails, there are the others to fall back upon. Dr. Porter could see no objection to combining any two of them in troublesome cases; though he had hitherto generally confined himself to the use of one at a time, so as to observe the individual action of the remedy in each instance.—("Phil. Med. Times," Oct. 28th, 1876.)

Ulcer of the Frenum Linguæ in Hooping-Cough. — Dr. Cutler communicates a paper on this subject. The ulcer was noted in 61·53 per cent. Dr. Cutler thinks the complication is due entirely to the undue and oft-repeated powerful dragging down of the tongue on to the lower teeth.—("Boston Med. and Surg. Journ.," Dec. 21st, 1876.)

Pistol-ball Wound of the Thorax, 3 inches below the left nipple, in a male aged 29, recorded by Dr. Collins, of the Pennsylvania Hospital. Three days after the accident the pain in the side increased, and diarrhœa set in. Twenty-seven days afterwards the ball was removed from the man's back. At the end of a month after the accident, the left side was found to bulge considerably, and was uniformly dull on percussion. On thrusting a trocar into the side, a quart of pus was drawn off, a drainage tube being afterwards inserted through which a discharge of fetid pus took place for some time. The man recovered.

Stab in the Thorax.—Dr. Cutler also records a case of a male, aged 40, who was stabbed with a carving-knife in the second intercostal space on the left side, close to the sternum. The hæmorrhage was excessive. Two or three weeks afterwards bulging of the left side occurred, for which paracentesis was performed, and 64 ounces of altered blood drawn off with the aspirator. Some days after the operation was repeated, and the pleural cavity was washed out with carbolised water. The drainage tube was kept in, through which fetid pus was discharged for some time, but the man ultimately recovered.—(" Philadel. Med. Times," Nov. 11, 1876.)

FRANCE.

(*Report by* H. DE FONMARTIN, M.D.)

ANATOMY.

Endocardium (by Ch. Robin and Cadiat).—The study of its structure, comparative anatomy, development and diseases affords proof that the endocardium is not a serous membrane. Moreover, this study shows that Bichat was perfectly right in saying that the right and the left endocardium are both alike in their structure, and only differ in their thickness. Their structure, in fact, is exactly the same as that which is found in veins. Thus, each endocardium consists of three layers, viz., (*a.*) epithelial; (*b.*) hyaline, *i. e.* Bichat's common coat; (*c.*) elastic. Thus, also, the muscular and the cellular, or adventitious coat of the heart respectively answer in the veins to homologous layers. The whole cardiac system, both auricular and ventricular, both right and left, is, therefore, derived from venous, not arterial, dilatation, by substitution of a variety of contractile fibre, *i. e.* striped fibre, for another one, *i. e.* cell fibre. The presence of striped fibre in the walls of those large veins which end in the heart, supports this view. Again, the elastic coat, which, in veins, corresponds to their layer of longitudinal fibres, is not, beyond the sigmoid valves, continued to the elastic coat of the aorta, or to that of the pulmonary artery. Again, whilst it is in the auricles and on the auricular aspect of the auriculo-ventricular valves that this elastic coat is by far the thicker; on the ventricular side of these valves, and in the ventricular cavities, which represent that small space which lies below the venous valves, this elastic coat partly disappears. The auricles, including their valves, can also be very aptly compared to that modification which the venous structures present above each valve, and the use of which, no doubt, is to strengthen the vessel. The striated hyalin coat behaves in a similar manner. No blood capillaries pierce the elastic coat, but blood-vessels reach its deeply-seated surface, as they do in veins. Thus, whilst that deep layer of elastic fibre which, in serous membranes, forms their surface of junction to the subjacent tissue, is perforated by a few blood capillaries, Bichat's coat, although this is in contact with a vascular layer, is deprived of all blood-vessels and scarcely possesses any absorbents. In fact, of the blood-vessels of the auriculo-ventricular and of the sigmoid valves, some lie under the elastic layer, and the others find their way through the valvular tendons. Both these sets of capillaries, therefore, are deeply seated in the fibrous structures of the cardiac valves.

Both comparative anatomy and embryogeny show the heart to be nothing but a venous dilatation. Thus, in fishes, the heart is placed on the course of that vein which empties itself into the branchia. In these animals, whilst the heart obviously consists of a venous recipient, *i. e.* the auricle, and of a venous propeller, *i. e.* the ventricle, the aorta results from the union into one median trunk of the arterious or branchial veins, which, in the other orders of vertebrata, correspond to the pulmonary or arterious veins. In reptiles the ventricle and one of the auricles most evidently belong to the venous system; and, in mammalia, the separation of the heart into two parts, viz., the one arterial and the other venous, is not completed until the moment of birth. Before this they freely communicate through the foramen ovale, and in an early period of intra-uterine development the heart is a mere tube coiled-up, receiving veins on one side, and giving off arteries from another. Later on one can see the common origin, *i. e.*, the aortic bulb, from which the arteries arise. It is in this, in fact, that the arteries do really originate, and the vessels which are attached to other parts of the heart belong to the venous system. This aortic bulb, in the course of fœtal evolution, divides into two arteries, viz., the aorta and the pulmonary artery. Hence the explanation of this fact, viz., that although the latter vessel carries venous blood, its structure is that of an artery.

Pathology, as plainly as normal and comparative anatomy, demonstrates the endocardium to be a special membrane, which, instead of being compared to serous membranes or to the inner coat of arteries, should be likened to the inner coat of a vein. Thus the endocardium, the constituent layers of which are not vascular, never inflames like the pericardium, but is liable to morbid changes similar to those which the inner coat of veins presents when inflammation of the subjacent layers invades it. Again, instead of remaining, as is usual, with the inner coat of arteries, indifferent to the development of inflammation in its neighbourhood, the endocardium, like the inner coat of veins, roughens, and clots deposit on its surface. In other words, endocarditis resembles phlebitis, not arteritis. Thus, in rheumatic disease, as the heart may be affected either in its endo-cardial coat or in its muscular layer, so may either Bichat's coat (hyaline) or the muscular layer of veins become implicated. Thus, again, during an attack of acute rheumatism, as acute inflammation of the heart may develop, so may acute phlebitis. In rheumatic subjects, however, acute phlebitis is far less common than are chronic venous lesions. These are the consequences of diminished tone of the contractile coat of veins, and are one cause of varices of the limbs and of hæmorrhoids.—(" Journ. de l'Anat., et de la Physiol.," Nov. and Dec., 1876.)

Pretended Absorbents of the Aorta.—Langhaus described, as being "saftkanälchen," stellated figures which he saw in the internal coat of the aorta by means of the same proceeding as that resorted to by Recklinghausen in investigating the "saftkanälchen" of the cornea. In M. Stroganow's opinion, this stellate appearance is due to puckers and wrinkles of the internal coat of the artery. In fact, this radiated aspect is observed only on the surface, and not at all in the depth of the internal coat of the vessel.—(" Archives de Physiologie," No. 4, 1876.)

The Allantois, a Vascular Organ.—M. Cadiat studied in the embryos of sheep and of calves the development of the allantois, which he does not believe to be an appendage of the digestive apparatus, but a mere prolongation of the aorta. Therefore, as regards their vascular system, no distinction should be made between the allantoidean and the anallantoidean animals; and the division which only refers to the presence or absence of the allantoid vesicle, should not be maintained.—(" Gazette Hebdomadaire de Médecine et de Chirurgie," No. 7, 1877.)

Venous System (by Cadiat).—Three coats constitute a venous, as well as an arterial wall. But whilst the vasa vasorum, in arteries, do not pierce the middle coat, these vessels, in veins, reach as far as the deeply seated surface of the inner coat. Again, whilst in most arteries the deeply seated layer of the inner coat is hyaline and elastic, this layer, in veins, consists of a network of delicate fibres. Again, a middle coat, composed of circular fibres, in some veins is altogether absent, and, in most, its presence is scarcely indicated. Lastly, the adventitious coat in arteries, contains small and isolated fascicles of longitudinal muscular fibres, which fascicles in veins are so much developed as to form a true muscular coat.

Venous Valves.—It is not correct to say that venous valves are mere folds of the inner coat. Their structure, in fact, is somewhat complicated. Thus, it chiefly consists of a prolongation through the inner coat of that elastic and homogeneous stroma in which are imbedded the muscular elements of the middle coat. Now, whilst the inner coat, including both its elastic and its striped layer, is prolonged on that valvular aspect which is turned towards the capillaries, both these layers, on the cardiac aspect of the valves, gradually disappear; so that, on the latter surface, the epithelial investment almost exclusively constitutes the lining of the valves of veins. As regards muscular elements, the circular fibres of the middle coat form a well-marked thickening, which M. Auzé de l'Aulnoit has described under the name of "fibrous thickening."—(" Gazette Médicale de Paris," No. 10, 1877.)

Structure of the Veins (By L. Ranvier).—The venous walls are not composed of three layers like the arterial walls, as Kölliker and Eberth thought. They are only constituted of two distinct sheaths, viz., the internal sheath, which is formed by the endothelium and sub-endothelial layer of connective tissue; the external sheath, which is mostly composed of connective tissue, intermixed with unstriped muscular fibre, the direction of which, compared with the axis of the vessel, is transverse. According to the various classes into which the veins are divided the quantity and the disposition of the muscular fibres vary. In the jugular veins, for instance, the muscular layer is extremely thin, being only formed by two or three rows of cells, which are either isolated or in small groups. The muscular fibres of these veins are disposed in small interrupted fascicles. At least, this is the case in the jugular veins of rabbits. M. Ranvier, with Wahlgren, and contrary to Eberth's opinion, admits that transverse muscular fibres can be seen at the base of the venous valves. Again, the internal sheath which lines the sinuses of these, presents the same structure and thickness as the covering of the external aspect of these valves.—("Traité d'Histologie," 1875—77, p. 572, *et seq.*)

Structure of the Lung (by Cadiat).—Before ending in ampullæ, the extremities of the bronchus present multiple orifices, and assume the appearance of anfractuose tubes or alveolar canals. These canals, which are intermediate between the bronchi and their terminal ampullæ, are lined with a layer of cubic epithelium belonging to that variety which some authors have wrongly described as lining the alveolar cavities. The epithelial lining of the alveoli alters with the age of the subject. First, it presents flattened and little adherent cells; these, in the course of time, become adherent, and, in the adult, are replaced by continuous lamels, in which neither nuclei nor definite cellular boundaries can be seen.—("Progrès Médicale," No. 16, 1877.)

Pulmonary Lymphatics (by J. Grancher).—The varicose appearance of the supra-lobular lymphatic vessels of the lung is not due to morbid enlargement. This dilated condition is normal, and should be referred to their lacunar and stellate disposition. The pulmonary lymphatics can be conveniently divided into two sets, namely, those of the air tract and those of the blood-vessels.

(*a.*) Lymphatic Vessels of the Air-tract.—The air-tract in the lung is well known to consist of small bronchi, each of which ends in a pulmonary lobule. Each lobule divides into infundibula, which themselves subdivide into alveoli; so that the whole apparatus consists of a cylindrical duct, the extremity of which is dilated in the shape of a conical and alveolar ampulla. This minute apparatus is, in fact, nothing else but the anatomical unit of the human lung. This miniature lung is thoroughly invested with lymphatics, and these vessels lie in that connective tissue in which both the bronchus and the pulmonary lobule are enrobed. This lymphatic investment of the air-cavities consists of lacunæ, *i. e.*, stellate hiatuses, which are lined with endothelium and framed in fascicles of connective tissue; the meshes of this lymphatic web being remarkably small. Since the lymphatic networks are accurately moulded upon the shape of the pulmonary lobule itself, their configuration is constant. Not only is each minute air apparatus enveloped in a lymphatic sheath, but, in addition to this, each segment of this miniature lung is surrounded with a special lymphatic bag. Thus, whilst around a pulmonary lobule we first find a perilobular plexus, within this we can distinguish periinfundibular networks, *i. e.*, a distinct set of absorbents around each infundibulum; and, still more deeply seated, are to be seen perialveolar plexuses, that is, a distinct one for each alveolus. Of course, besides these three sets of lymphatic capillaries there is a peribronchial plexus from which lymphatic trunks gradually arise, their number increasing in proportion as they run nearer the hilum of the lung. These trunks, along their course, receive the contents of both the sub-mucous and the periglandular bronchial absorbents.

(*b.*) Lymphatic Vessels of the Vascular Apparatus.—The arteries and the veins in the lung are invested with a lymphatic sheath which is very like that which envelops the cerebral blood-vessels. This perivascular tract is very easily injected. It is very extensive. Sometimes it ensheaths the blood-vessels in a large uninterrupted lymphatic zone, as it were, a true perivascular lymphatic lake. Usually, however, irregular lacunæ are found in it. These are perfectly separated from each other, and this interrupted sheath presents no anastomotic disposition. The injections made by M. Grancher, in children's lungs, enabled him to follow the course of the perivascular lymphatics as far as the infundibular artery. On this vessel he saw the absorbents ending in a tapered and sharp point, and then disappearing where the tunica adventitia could no further be traced. It is a fact, therefore, that the blood apparatus of the lung, as well as the air-tract, is completely surrounded with a lymphatic network. As regards the existence of those minute absorbents which Vyvodvof says surround the blood capillaries, M. Grancher, although he does not wish to deny their reality, is not actually prepared to affirm their presence. Were this assertion of Vyvodvof's correct, and were the absorbents connected with the blood capillaries in the same manner as they are disposed around the larger vessels, hæmatosis would not only have to be effected through an epithelial layer and a capillary wall, but, in addition to these, through the lymph itself; unless that side of the blood capillaries which corresponds to the alveolar epithelium be destitute of perivascular lymphatic sheath. Hence this question, viz., do the phenomena of hæmatosis take place in the lymph as well as they do in the blood? Lastly, lymphatic trunks gradually develop on the larger blood-vessels, and they reach the ganglia of the hilum pulmonale, which ganglia lie as well in the perivascular as in the peribronchial connective tissue. M. Grancher, in some cases of pulmonary tubercle, saw hypertrophied ganglia compressing, like a constricting ring, both the right and the left pulmonary artery.

(*c.*) Relation of the Absorbents to the Connective Tissue.—These vessels are most numerous where the connective tissue is most abundant; thus nowhere, in the lung, are the lymphatics so many and so large as in the subpleural region. No organ, gives evidence of these truths, more strongly than does the lung, viz., that the fascicular interspaces of the connective tissue are lymphatic capillaries; and that the so-called varicose plexuses are nothing else but lymphatic vessels which have no walls other than the endothelial lining of the connective fascicles. A proof that the absorbents of the lung are intimately connected with its interstitial tissue, is afforded by studying the pathological processes of pulmonary phthisis. This study shows lymphatic and connective tissue-products to be constantly associated together.

(*d.*) Lymphatic Anastomoses and Circulation.—Each miniature lung, *i. e.*, each pulmonary lobule, including its bronchus, is supplied with blood by one artery, which divides into infundibular twigs; each of these, in its turn, breaks up into alveolar capillary plexuses. But no anastomosis can be detected between the arterial vessels of neighbouring lobules. The veins which arise from the alveolar and from the bronchial capillaries, communicate, it is true, with those of the adjacent lobules; nevertheless, these venous anastomoses, if they are compared with that free communication which exists between the various lymphatic plexuses, will be found to be but of little importance. This, first of all, is a noteworthy point, viz., that on each of its faces a perilobular lymphatic plexus is connected with a neighbouring lobule. Thus, in the case of a hexagonal network, this will unite to the central lobule six adjacent lobules, each of its faces being common to the central and to one contiguous lobule. As regards the deeply-seated perilobular plexuses, this assertion is accurately correct. In reference to a superficial perilobular plexus, however, this restriction should be made, that each of its faces, but one, belongs both to the median and to one adjacent lobule; that face which belongs to no lobule other than the median, corresponds to the subpleural aspect of this lobule. Now, if subpleural absorbents are injected, the injection first will penetrate into a great number of common, *i. e.*, perilobular plexuses; and it will only subsequently reach those networks which are special to each lobule, such as the periinfundibular and the perialveolar plexuses. Likewise, if, for instance, the external surface of the lung is irritated, not only will the subpleural perilobular plexuses readily become congested, but congestion will also extend to the deeply seated portion of the lung and to the internal surface of this organ. Amongst the various sets of pulmonary vessels the absorbents, therefore, are those which most freely communicate. Not only do they establish anastomoses between distant lobules, but they also, by means of a partly common circulation, blend the lobules together. Hence, any pathological processes which can develop through the lymphatic system present the greatest tendency rapidly to involve a large extent of lung.

Lastly, the presence of lymphatic epithelium in all the various plexuses can be ascertained. M. Grancher, however, after injecting them, has succeeded in detecting the perialveolar networks only.—(" Gaz. Médic. de Paris," No. 9, 1877.)

On some Flat Epithelia in the Animal Kingdom (by F. Tourneux and G. Hermann).—(*a.*) The hyaline membrane, which limits the mucous membranes, does not consist of flat cells juxtaposited and soldered together; but, like the superficial layer of the derma, it is continued to the amorphous matter of the subjacent chorion. (*b.*) The epithelial cells, which line a serous membrane, are not alike in all its parts. Thus, amidst those flat cells, which are called endothelial, it is possible from space to space to detect smaller elements, which are disposed in the shape of trails or islets, and the genesis of which is similar to that of the larger elements. (*c.*) These smaller cells usually lie in depressions of the serous surface. They do not, therefore, appear to be exposed to so much rubbing as are the larger elements. (*d.*) These smaller cells present more active nutrition than do the so-called endothelial cells. The former, consequently, should be looked upon as being proliferous centres, and as being in a stage of evolution for becoming the latter. (*e.*) They are accurately tangential to each other, and no open interstices, like stomata, exist between them. If any absorption take place, this, therefore, should be exclusively referred to some special property of their envelope, which property renders them liable to be penetrated by solid particles. It has been proved that such is the case with regard to the absorption of fats by the cells of the enteric mucous membrane. (*f.*) These proliferous centres can develop either outwards or inwards. Whilst their outward development gives rise to mulberry-shaped products, such as the epiploon, tapering growths, like the peritoneal surface of the phrenic centre, result from their inward extension, and penetrate the subjacent tissue. To this latter mode of development is due that appearance which has been described as lymphatic wells. (*g.*) Since, by their genesis and structure, the constituent cells of these products are continued to the epithelium of the serous membranes, they can possibly be tangential, but in no case continued to the epithelial lining of the lymphatics.—(" Journ. de l'Anat. et de la Physiol.," July and Aug., 1876.)

Physiology.

Mechanism of the Cardiac Systole.—M. Laborde, by studying the heart of the embryo in birds, found that, contrary to M. Bouillaud's theory, cardiac contraction begins in the auricle. This organ, therefore, is the *primum vivens* as well as the *ultimum moriens.* In embryos, contraction starts from the superior *vena cava,* and successively extends to the auricle and reaches the ventricle. It is also in this way that, in batrachians, cardiac contraction proceeds; and, by rendering the circulation in dogs as slow as that of batrachians, one can easily ascertain that in them a similar mechanism exists. Thus, in all the animal kingdom the laws of central circulation are alike.—("Gaz. Médic. de Paris," No. 34, 1876.)

Function of the Auriculo-Ventricular Valves.—From his experiments on the auriculo-ventricular valves, M. Lurmay arrived at the following conclusions:—(*a.*) The occlusion of the auriculo-ventricular orifices is an active phenomenon, which is due, as regards both the right and the left orifice, to the tension of their valves. Below each orifice these form an inclined plane on which the blood current can slide, and thus can directly and readily escape through the ventricle into the arterial opening. (*b.*) These valves, therefore, are for the auriculo-ventricular orifices a means of occlusion; for the blood current a means of transmission and direction; and for the auricular cavities a means of protection. (*c.*) Lastly, the auriculo-ventricular valves, for these ends, are moved by valvular muscles.—("Journ. de l'Anat. et de la Physiol.," Sept. and Oct., 1876.)

Effects on the Heart, Respiration, and Circulation, of the Stimulation of Sensitive Nerves.—M. Franck fully agrees with M. Cl. Bernard on this point, viz., that any intensely painful stimulation, whatever its nature may be, can produce syncope. The duration of cardiac suspension, of course, varies according to the intensity of stimulation, individual sensibility, etc. Some authors, however, believe that painful stimulation accelerates the heart; but this is only an ulterior effect. Others, such as MM. Arloing and Tripier, admit that stimulation is followed by sudden and energetic systole. M. Franck attributes the production of functional disturbance to some reflex action determined, through the medium of the bulb, upon those nervous tubes which the vagus receives from the spinal nerve. Thus anæsthesia, by suppressing pain, prevents the cardiac manifestation, the instruments of which, *i.e.*, the vagi, are paralyzed. Again, in young animals, after the removal of the cerebral hemispheres, the liability to cardiac disturbance persists. This circumstance seems to be an argument in favour of that view which assigns a reflex nature to this phenomenon. In addition to this, painful stimulation determines variations of arterial tension. These, which formerly were attributed to cerebral influence (Cyon), chiefly depend upon the cardiac function itself. In fact, if, whilst the cardiac action remains normal, the vaso-motor centres are stimulated so as to determine general constriction of the vessels, arterial tension will be increased. But if, at the same time that it contracts the vessels, this stimulation abates the velocity of the heart, the tension will decrease. If, however, the heart, though less rapid, continues to propel a sufficient quantity of blood, the reflex shrinking of the vessels will suffice to augment the tension.—("Gaz. Médic. de Paris," No. 51, 1876.)

Discharge of the Heart (by F. Franck.)—(*a.*) The section of the vagi determines acceleration of the cardiac beats and increases the cardiac discharge. (*b.*) The stimulation of those cardiac nerves which originate in the first thoracic ganglion, accelerates the heart's action without increasing its discharge. (*c.*) Whenever one compresses the heart by injecting into the pericardium from one to one and a-half cubic centimetres of air, arterial tension gradually subsides. This effect results from the collapse of the auricles, owing to which collapse the afflux of blood is impeded. In certain cases of pericardial effusion a similar mechanism may possibly be observed.—("Progrès Médic.," No. 20, 1877.)

Variations in the Volume of the Heart (by F. Franck).—If, while you keep your nostrils close, your glottis open, and your respiration suspended, you place between your lips the tube of a registering apparatus, you will register the movements of the volume of air contained within the respiratory tract. If, at the same time, the cardiac beats, as well as these movements are registered, you will find that to each systole will correspond a depression, and to each diastole a rise of the buccal tracing. Since the depressions and rises of this tracing are the reverse of those of the cardiac tracing, the former cannot be due to the pulsations of the pulmonary artery. They depend upon variations in the volume of the heart, *i.e.*, diastolic enlargement or repletion, and systolic subsidence or evacuation. These results can be easily understood. In fact ventricular systole determines a tendency to vacuum; hence, the air within the lung becomes rarefied, and the buccal tracing indicates subsidence of the volume of the heart. *Vice versâ*, ventricular diastole compresses the air within the lung; accordingly the ascending line of the buccal tracing shows an increase of volume. In order to perform this experiment, it suffices—the glottis being kept open—to blow gently through a T tube, one branch of which communicates with a water manometer and the other with a registering apparatus. If, on the contrary, the glottis were kept close, the tracing thus registered would be that of the arterial pulsations. In experimenting on animals a tracheal tube should be substituted for the buccal. Again, if, by opening the thorax of the animal which is the subject of the experiment, all possibility of aspiration and pressure from the heart were obviated, the tracing thus registered would be the mere effect of the variations in volume of the pulmonary artery and its divisions. Lastly, the T tube might also be very conveniently inserted into the lower part of the pericardium, somewhat below its diaphragmatic attachment. The tracing thus obtained would register the variations of that volume of air which has been introduced into the pericardial cavity, and which is alternately rarefied and compressed by the variations in the volume of the heart.—("Gaz. Hebd. de Méd. et de Chir.," No. 18, 1877.)

Faradisation of the Heart. (By Bochefontaine).—In previous experiments, in which dogs were placed under the influence of aconitin, M. Bochefontaine faradized their hearts without suspending cardiac contraction. In more recent experiments, he faradized the hearts of dogs, a few days old, with the same results. Considering that, in adult dogs, not aconitinised, faradisation of the heart determines at first fibrillar contraction, and ultimately permanent arrest of the organ, this result must depend upon the age of the animal.—("Gaz. Hebd. de Méd. et de Chir.," No. 20, 1877.)

Electric Stimulation of the Heart (by Marey).—Conclusion: the liability of the heart to be stimulated varies at the different periods of its revolution. A single shock, provided this be energetic enough, will always, as stated by Bowditch, determine a systole. If, on the contrary, this single shock is feeble, contraction can only be produced at certain moments. Each cardiac revolution, therefore, presents a period during which the heart is refractory. This period, the duration of which depends both upon the energy of the stimulus and upon the condition of the organ, corresponds to the beginning of the ventricular systole. In reference to the energy of the stimulus, if this is feeble, the refractory period may possibly outlast the ventricular systole. The duration of the former will, at all events, not be shorter than that of the latter. As the stimulus increases in intensity, the refractory period is found to be more and more limited to the first instants of ventricular contraction; and, if the shock is powerful enough, no refractory stage will be observed. As regards the condition of the organ, whilst heat will abridge the duration of the refractory period, or even suppress it entirely, cold will protract it; so that, from the coincidence of this phenomenon with the beginning of ventricular systole, one might well infer that it possibly is the effect of that lowering of cardiac temperature which periodically recurs at the end of each ventricular diastole. The contractions thus artificially induced do not apparently disturb the rhythm of the heart. This organ, in fact, compensates by a pause longer than its normal rest for the excess of work which it has been compelled to perform. Thus the amplitude of all artificial systole will be more marked in proportion to the lapse of time since the last spontaneous systole; and the longer the time since spontaneous systole, the more rapidly will artificial contraction be produced by the application of the stimulus. Consequently, if a series of feeble electric shocks are applied to the heart, most of them will find the organ refractory to their influence, and the shocks will far outnumber the systoles. In fact, as soon as the heart has answered to efficient stimulation, a refractory period takes place; the consequence of which is that feeble shocks may vary in frequency without apparently modifying the number of systoles. If, on the contrary, whilst their frequency remains unaltered, the intensity of the shocks is increased, the refractory stage will be shortened, and the number of systoles will more and more tend to correspond to the number of shocks. Lastly, if strong shocks are frequent enough, a tetanic state of the heart will be produced. Currents of short duration, such as those determined by piles, appear to act very similarly to currents of induction. Thus the effect of a feeble uninterrupted current produced by a pile, will be the same as that of a series of shocks, *i. e.*, it will accelerate the cardiac rhythm. This is because such a current will operate only during the non-refractory period of cardiac revolution. Moreover, since powerful shocks abridge the duration of the refractory period, a strong current generated by a pile will still more accelerate the heart; and, if its energy is sufficient, it will completely tetanise this organ.—("Jour. de l'Anat. et de la Physiol.," No. 1, 1877.)

Experiments on the Nerves supposed to be Inhibitory (by Onimus).—It is well known that, if the vagi are stimulated by an induction current, the heart will, at least for a few moments, be arrested. Hence, some authors have inferred that the pneumogastrics are inhibitory nerves. Now, in their active state, the spinal nerves, motor as well as sensory, receive an average of thirty-five shocks per second. This is pretty nearly the number of shocks determined by such an induction current as is produced by an ordinary apparatus. In this case physiological and artificial stimulation are almost identical, and their respective effects can fairly be compared together. But it is not so as regards some rhythmic or automatic systems, in which physiological stimulation takes place only once or twice per second. If within this time you produce from thirty to forty shocks, as is usual with ordinary induction currents, the physiological conditions will be altered, and the result of this artificial stimulation will be only a perturbation of the normal rhythm. Some years ago, MM. Ch. Legros and Onimus noticed that stimulation of the vagi by means of induction currents, interrupted only at long intervals, fails to arrest the heart. They, at the same time, proved that, in order to provoke cardiac suspension in warm-blooded animals, not less than from sixteen to eighteen shocks per second are required. By a less number of shocks than this, cardiac contraction was reduced in rate, but increased in energy. More recent experiments have shown M. Onimus that one single moderate stimulation of the pneumogastric nerves, far from suspending the heart, provokes its contraction. Curarize a warm or cold-blooded animal so that the number of cardiac beats per minute is reduced to from forty to fifty, and then stimulate either the vagi or the heart once per second, and you will accurately determine sixty beats per minute, each electric shock provoking a contraction with the most perfect regularity. By placing the animal under the prolonged influence of chloroform, similar results can be obtained. Let a frog be kept in a chloroformic solution until all movement is abolished and until the cardiac beats are reduced, for instance, to fifty per minute. Then administer sixty shocks per minute and an equal number of contractions will be provoked. If, however, there are only from fifteen to twenty cardiac beats per minute, sixty electric shocks will diminish the number of contractions instead of increasing it. Suppose that twenty-five be the number of cardiac beats per minute, then twenty-six, twenty-seven, twenty-eight, twenty-nine, thirty shocks per minute will respectively provoke twenty-six, twenty-seven, etc., contractions. Beyond this limit, the number of cardiac beats will decrease, and there will no longer be correlation between the contractions of the heart and the interruptions of the electric current. The number of electric shocks, therefore, should be regulated according to the velocity of the heart. However, the way in which electricity acts upon the heart is not uniform. Thus, if this organ is contracting thirty times, and if you administer thirty-five shocks per minute, the number of cardiac beats at first will rise to thirty-five, it is true, but subsequently this may reach forty or more. In this occurrence, more frequent shocks will become necessary to control the new rhythm. With regard to other rhythmic movements, similar phenomena are observed. If, for instance, ordinary induction currents are made to pass through an intestinal loop, this will relax and remain inert, except in those points to which the rheophores are applied, and where merely local contraction can be seen. If, on the contrary, the number of shocks per minute is regulated according to the rapidity of intestinal contraction, *i.e.*, from fifteen to eighteen per minute, not only will this not be suspended, but both its frequency and its energy will be increased. Of course, the number of electric shocks required per minute should be appropriate to that portion of digestive tube to which the rheophores are applied. It also should vary with the state of emptiness or fulness of this canal. Thus, whilst the duodenum performs eighteen contractions per minute, the other regions of the enteric tract contract less rapidly; and everybody knows that an empty bowel does not contract so readily as a distended one. But, with regard to both the intestine and the heart, contraction is suspended by too frequent, and becomes accelerated by quasi-physiological stimulation. This rule also applies to the vaso-motor nerves. Ordinary induction currents provoke vascular contraction and consequent abatement of circulation and temperature. Under the influence of currents rarely interrupted the temperature tends to rise, owing to vascular dilatation and accelerated circulation. In short, the unstriped muscular fibre and the vegetative nerves, especially those which belong to a system of rhythmic or automatic movements, do not answer to artificial stimulation in the same way as do the spinal nerves. Whenever experimental stimulation is too frequently repeated, the function of the former set of nerves and muscles immediately becomes deranged, and the inhibitory phenomena which take place in these conditions are mere manifestations of functional disturbance. Moreover, the preceding experiments apparently demonstrate that the nerves supposed to be inhibitory function like all the other nerves, viz., their physiological stimulation always provokes an increase of functional activity in those organs to which they are distributed.—("Comptes-Rendus de l'Acad. des Sc.," Nov. 20th, 1876.)

Respiratory Sounds.—MM. A. Boudet and A. Chauveau operated on a mare which was affected with inflammation of the left lung. Previously to any operation, the auscultation of the thorax gave the following results:—All over the right lung, marked increase of the normal inspiratory murmur; no expiratory sounds. Over the upper half of the left lung, loud inspiratory murmur. Over the lower half, absence of all vesicular murmur; presence of a double tubular blowing, this being shorter and harsher during expiration than during inspiration. Over the trachea, double tubular blowing sound, presenting the same characters as in the lung; this tracheal sound, however, being still louder than the pulmonary blowing.

The preceding conditions having been ascertained, a large incision was made in the trachea, so that very little air, if any, was allowed to pass on through the larynx. This operation, unfortunately, caused the escape into the trachea and bronchi of a certain quantity of blood; and this accident determined the production of such coarse râles that the distinct character of the breathing could not then be well recognized. In addition to the presence of these large râles, whenever the tracheal incision was dilated with the fingers so as to allow the passage of the air, this attempt provoked such fits of coughing that the experiment had to be suspended. On the following day the tracheal wound was found closed, and no air was escaping through it. All the râles having completely disappeared, auscultation then gave exactly the same results as those obtained before the beginning of the experiment. Then a new attempt to open the lips of the incision was made. No disturbance having followed this, the following observations could be repeatedly made:—(*a.*) Auscultation of the consolidated portion of lung, the tracheal incision being kept closed; double tubular blowing sound (bronchial breathing) shorter, but harsher during expiration than during inspiration. The tracheal wound being kept open; no blowing sound during inspiration; expiration still blowing, but only slightly so. (*b.*) Auscultation of the trachea below the opening. While the wound was kept closed, both inspiration and expiration were blowing, the latter being shorter and harsher than the former. While the wound was kept open, inspiration was no longer blowing; expiration was still, but only slightly blowing, and it was still, but only slightly, prolonged. (*c.*) Auscultation of the healthy lung and of the sound portion of the diseased organ. Whether the tracheal opening happened to be patulous or closed, the vesicular murmur remained normal and most distinct. Each time the wound was opened, the vesicular murmur—its normal character remaining unaltered—became, if anything, somewhat more intense. An India-rubber tube, the free extremity of which contained a membranous reed, was then fitted to the tracheal aperture; and, by blowing through this reed, the air contained in the trachea was made to vibrate. While this was done, not only could the ear, applied to the thorax over the consolidated portion of lung, most distinctly detect the sound, but this was heard as though it were produced close to the ear. The healthy tissue, on the contrary, utterly failed to conduct the sound. During three days the above experiments were again and again repeated. Now and then both the tubular blowing and the sound produced by the reed suddenly ceased to be audible in the consolidated tissue, respiration, at the same time, becoming absolutely silent. But, as soon as the animal coughed, all the tracheo-pulmonary sounds regained their full intensity. This clearly shows that their cessation depended upon the presence of mucus plugging the bronchial tubes. The act of coughing, by displacing this plug, rendered the acoustic phenomena again audible. At the end of a fortnight the mare had recovered from her pulmonary affection; but in the course of a few days she died of tetanus, and pathological proof of the presence of pneumonia was obtained.

Conclusions.—(*a.*) Since, in this animal, the normal lung-tissue failed to conduct the sound produced by the membranous reed which had been applied to the trachea, the normal vesicular murmur cannot be a conducted sound, but must be one developed *in situ.* (*b.*) Consolidated pulmonary tissue, on the contrary, is apt distinctly to conduct sounds such as those which may be produced in the trachea. Therefore, blowing inspiration, which is heard over a consolidated r, may be due to no other cause than the conduction of sounds loped at a distance. (*c.*) Since those blowing sounds which accompany the presence of pneumonia behave exactly like tracheal sounds, that is to say, since (whether the sounds be pneumonic or tracheal) those circumstances which cause one set to disappear, to become audible again, or to be somehow modified, simultaneously and similarly influence the others, both these sets of sounds must be the effects of the same cause. Moreover, they must be the same sounds, only with this difference, that they are heard in two different regions. (*d.*) Since, at the very moment that the afflux of air through the nearly closed rima glottidis is suspended, inspiration entirely loses its blowing character, the production of this blowing sound must be connected with the formation of that sonorous current of air which results from the escape of the air through the nearly closed glottis into the trachea. Notwithstanding the presence of the artificial opening made in the trachea, the blowing sound during expiration still persists, because a vibrating current of air is still produced. This current, however, instead of resulting from the escape of the air out through the glottis—a relatively narrow aperture—is formed as the air comes out through the tracheal incision, which, if compared with the glottis, will be found to be a very large opening. The modification which is observed in the character of the resulting sounds, corresponds to the difference between the modes in which the vibrating current of air in these two cases is produced. Hence this conclusion, namely, that the seat of origin of all tubular blowing sounds, whether these be detected in the trachea or in the lung, obviously lies in the larynx, which organ, both during inspiration and during expiration, presents the conditions required for the formation of a vibrating current of air.—(" Rev. Mens. de Méd. et de Chir.," No. 9, 1877.)

Theory of Respiration (by B. Peyneau).—MM. Savart and Chauveau's experiments have fully established the following facts, viz.:—(*a.*) Whenever a fluid body passes through an orifice, the sound then produced is not generated by the vibration of the parietes of the aperture, but by that of the fluid itself. (*b.*) Whenever a fluid body which is running through a narrow aperture reaches a space abruptly enlarged, this fluid vibrates, and thus it produces a sonorous current. Now, as the air during inspiration passes through the glottis, a sonorous current is formed; hence the production of inspiratory laryngeal sounds. Again, since in every bronchial tube the sum of the capacity of its divisions is greater than that of the main tube, each bronchial dichotomisation must determine the formation of a sonorous current during inspiration; hence the production of inspiratory bronchial sounds. Contrary to MM. Barth and Roger's views, MM. Savart and Chauveau have plainly demonstrated that, in the production of bronchial sounds, the friction of the air against the walls and spurs of the bronchi is of little import. The vesicular murmur likewise results from the formation of sonorous currents as the air passes from the capillary bronchi into the alveoli. Owing to the large capacity of the pulmonary cells compared with that of the tubes, the vesicular murmur in a healthy lung will drown all other sounds, *i.e.*, the laryngeal and the bronchial. But, supposing that the alveoli become the seat of certain lesions which do not implicate the bronchi, the laryngo-bronchial sounds will no longer be drowned by the vesicular murmur. Blowing inspiration, in fact, is due to the abnormal condition of normal sounds, *i.e.*, of both the laryngeal and the bronchial sounds combined together. Thus, in pneumonia, whilst the vesicular murmur is abolished, the laryngo-bronchial sounds are readily conducted through the consolidated tissue, and inspiration is decidedly blowing. Again, in pleurisy, the vesicular murmur is suppressed, it is true; but here the smaller bronchi, as well as the lung-cells, are compressed by the effusion, and the intensity of the bronchial sounds is diminished. Here, therefore, notwithstanding the persistence of the glottic sounds, which remain unaltered, and although the effused fluid is a good conductor of sound, the blowing character of inspiration is less marked than it is in pneumonia.

If we now study expiration we shall find that the reverse is the case. The alveoli being the essential agents of the outward flow of air, supposing hepatisation to be absolute, no expiratory sound can possibly be detected in that portion of lung which is affected with pneumonia. In the great majority of cases, however, a sufficient number of vesicles remains free, and expiration is carried on. Now, as is shown by those tubular casts which are found in pneumonic sputa, many of the intralobular bronchi of the consolidated tissue become plugged by secretory products, the quantity of which steadily goes on increasing. Owing to this plugging of most of the alveoli and of some of the smaller bronchi, that air which, during expiration, is passing from the free alveoli and the patulous bronchial twigs into the larger tubes, escapes from a smaller into a larger cavity. Hence, the formation of sonorous currents in those points where free bronchi give off obturated twigs; hence, the presence of blowing expiration in the whole extent of that region which is dull on percussion; and in proportion, as consolidation increases in surface and depth, expiration becomes more and more distinctly blowing, because the diminution in the number of the sonorous currents then formed is more than compensated for by their enlargement. If, as before said, too few lobules remain pervious, no expiratory sound whatever can be detected.

Now, whilst in pneumonia the origin of blowing expiration lies exclusively in the diseased portion of the lung; blowing expiration in pleurisy results from the breathing of that portion of pulmonary tissue which is not compressed by the effusion; whilst the alveoli and smaller tubes of the compressed portion are collapsed, its larger bronchi remain patulous. Of these larger tubes, those which correspond to the superior layers of the effusion, send off both collapsed twigs to the compressed portion below, and patulous ones to the breathing-tissue above. The consequence of this disposition is that the air, as it recedes from these patulous twigs into the trunks, escapes from a smaller into a larger recipient. Hence, the production of sonorous currents; hence, the presence of blowing expiration. These conditions will explain why expiration in pleurisy is more gently blowing and more distant than it is in pneumonia. They will also account for the limitation of blowing expiration to the upper part of the area of dull percussion. Again, considering that the sonorous currents, which are formed under these circumstances are directed from the uncompressed towards the compressed portion of lung, that is, from upwards downwards, one can easily understand why blowing expiration is best heard somewhat below the upper level of the effusion.

The "sonorous currents" theory also accounts for the noisy character of so-called "supplementary respiration." Whenever one portion of normal lung has to supply the functional deficiency of a diseased portion, this supplemental process, in the healthy tissue, is not carried on by any increase in the size or functional activity of those alveoli which are already in play, but some of those lung cells which, till then, had remained collapsed, come into play. Owing to the additional expansion of these, the normal predominancy of the capacity of the vesicles over that of their afferent bronchi becomes exaggerated. As a consequence of this exaggeration, the size of the normal sonorous currents becomes increased, and the vesicular murmur accordingly is intensified. One proof that this is the real mechanism of supplementary respiration is afforded by the fact that the characteristic of this type of breathing is that it is vesicular, not blowing. This opinion is also confirmed by the circumstance that the apices of the lung, one or both, are the favourite seat of supplementary respiration. Since the apices, in their normal state, function with very little activity, the amount of collapsed cells stored up in these parts very likely exceeds the relative proportion of spare vesicles contained in the other portions of the lung. The apicial portions are, therefore, better adapted than any others to the performance of supplementary respiration.—("Archiv. Génér. de Méd. et de Chir.," March, 1877.)

Experiments on the Vagi.—M. Tripier ascertained that there are, according to the species of the animal, and even in the same species according to individuals, exceptions to the rule that, whilst the left vagus mainly acts upon the lung, the right chiefly influences the heart. The section of either nerve, no doubt, may of itself be a cause of death. Thus, there are on record at least two cases in which, in human subjects, death supervened on the section of the right pneumogastric nerve. Out of twelve experiments in asses, in which the unilateral section of the cervical portion of either vagus was performed, M. Tripier observed seven instances of death; namely, four after section of the right, and three after that of the left nerve. In these seven cases the fatal termination was preceded by paralysis of the œsophagus and of the stomach. In rabbits, out of nine cases of section, death occurred three times; in these three fatal cases it was the right vagus which had been cut across. In horses, above forty experiments gave only one case of death; and this was from section of the right nerve. Death, in some instances, appeared to be referable to paralysis of the lower portion of the œsophagus, which caused the aliments to accumulate in this organ, from which they overflowed, and then entered the respiratory tract; and therefore, when performing the operation of tying the main vessels of the cervical region, the pneumogastric nerves must not be included in the ligature. From his experiments, M. Phillipeaux concludes that the time which should be allowed to elapse between the section of one of the vagi and that of the other ought to average thirty days for cats, sixty days for dogs, and eighty days for guinea-pigs. If this rule is not attended to, the second section, very probably, will kill the animal. M. Cl. Bernard observes that Traube is in error when he says that, in all those animals which die of the section of the vagi, death invariably results from the introduction of either aliments or sputa into the trachea. Let a canula be placed in the trachea of a rabbit, taking care that it can breathe freely, and then let its vagi be cut across. Although no foreign body can penetrate into its trachea the rabbit will die within about twenty-four hours, and, on dissection, sanguineous foci will be found in the lungs. In these conditions the rapidity with which death supervenes varies with the degree of vital power of the lung. Thus, the younger the animal, the sooner death takes place.—("Progrès Médic., No. 51, 1876.)

Physico-Mechanical Effects of Compressed Air (by P. Bert).—If an animal, the pulmonary capacity of which is 600 cubic centimetres, be made to breathe air under a pressure of three atmospheres; on re-establishing normal pressure, it will be found that 1,350 cubic centimetres of gases will escape from the lung, *i.e.*, 150 cubic centimetres more than is indicated by calculation. If pressure be gradually increased, the pulmonary capacity will undergo simultaneous, but not proportional development. This increase of the lung capacity is rendered possible by the compressibility of the intestinal gases and by the consequent flattening of the digestive canal, owing to the collapse of which, the diaphragm and the liver are allowed to subside into the abdominal cavity. The diaphragm does not instantaneously assume its new position lower in the abdomen. Its descent takes place little by little, and requires nearly half an hour for its completion. Inhalation of compressed air, if this be frequently repeated, will render permanent this subsidence of the diaphragm; so that the lung, even under normal pressure, will for some time afterwards retain its increased capacity. Compressed air baths, therefore, should not be expected to act rapidly; but, when they once have begun to produce their effect, this is likely to persist for a while.—("Gaz. Médic. de Paris," No. 33, 1876.)

Mechanism of Anæsthesia (by Cl. Bernard).—During anæsthesia all vital phenomena are suspended. Thus, in water-cress, either etherised or chloroformised, germination is arrested. Provided the dose has not been such as to kill the seed, when the anæsthetic agent is removed, germination will soon be resumed. Again, the effect of ether or chloroform is to suspend the action of vital ferments, such as yeast; and on the removal of the drug the fermentative properties are fully recovered. Again, although any green plant will continue to breathe and to develop carbonic gas while it is anæsthetised, on being exposed to solar light it will no longer evolve any oxygen. Anæsthesia, therefore, is a general phenomenon which, both in vegetables and animals, presents the same features; and which, although the nervous system is primarily acted upon, implicates every kind of tissue. In anæsthetised organisms the suspension of vital action very probably depends upon some modification of the protoplasm. Those phenomena which we can prove in the muscles show that this suspension is most likely the consequence of coagulation. M. P. Bert observes that, during anæsthesia, whilst in the mimosa pudica the diurnal and nocturnal spontaneous movements are not in the least modified, no movement can be provoked. M. P. Bert's notion is, that in this plant, the production of spontaneous movements is very probably due to a flow of water into that inflated portion which can be seen at the base of the petiole. Now, this afflux should be determined by the formation of a certain osmotic matter. This substance, under the influence of yellow light, should develop in those cells which constitute the inflated portion of the petiole. On exposure to violet rays this matter disappears.

It is a well known fact that anguillules, after being desiccated, remain inert. If you then moisten them with pure water, their motility will be restored. If you place them in a strong solution of chloroform, not only will their movements cease, but, if they are subsequently placed in pure water, they will not regain their motor power. If, instead of being concentrated, the chloroform is diluted with its weight of water, the anguillules will, as they did in a strong solution, fall motionless at the bottom of the liquid; but if they are removed from this and then placed in pure water, they will resume their movements. In these animals, therefore, life is destroyed by a concentrated solution of chloroform, but is only suspended if the solution is sufficiently diluted. A watery solution of ether acts in the same manner as chloroform water, though with less intensity.

Lastly, anguillules, like the muscles, become opaque during etherisation, and recover their transparency when it is stopped.

Whereas anæsthetics coagulate albumen and myosin, and considering that vegetable germs, as well as mimosæ pudicæ, contain a certain matter which is analogous to the immediate constituents of the substance of the brain, M. Berthelot thinks that anæsthesia, in vegetables as well as in animals, may possibly result from some chemical modification of this constituent matter.—(Progrès Méd.," Nos. 30 and 45, 1876.)

Effects of the Arrest of Encephalic Circulation.—M. L. Couty experimented on curarized dogs, in which respiration was artificially carried on to obviate all secondary effects that any respiratory disturbance might produce on circulation. By tying the carotids in dogs not curarized, Astley Cooper, and all subsequent experimenters, provoked cardiac acceleration. M. Couty, on the contrary, has obtained pretty-well marked slowing of the heart. Bichat, Kussmaul, Tenner, etc., in performing their experiments, used to tie the carotid and vertebral arteries. This method can, at least in dogs and rabbits, produce but very incomplete anæmia of the brain and of the mesocephalon. M. Vulpian's way of proceeding is far preferable. It consists in injecting into the brain, through the peripheric portion of the carotid cut across, or still better, through the lingual and in the direction of the carotid artery, obliterating matters, such as air or diluted lycopodium powder. Not only does this *modus operandi* completely and constantly suspend all cerebral circulation; but it also enables the experimenter, on post mortem examination, to recognise, with the microscope, which vessels have received the powder, and permits him to localise the source of disturbance. Thus, M. Couty could ascertain that, whenever circulation is suspended in the whole of the encephalon by the injection, after a delay of from twenty to forty seconds it constantly gives rise to the following phenomena:—(*a.*) Arterial tension gradually but rapidly rises from at least one grain and four-fifths to two grains and two-fifths of mercury. In some cases, the initial tension may possibly be doubled or even trebled. (*b.*) The frequency of the pulse is reduced from 160 and 130 to 50 and 40, and its fall is often still more marked than this. Then, the pulse is no longer modified by any respiratory disturbance. The increase of tension is the first phenomenon which takes place. This is followed by and usually outlasts cardiac slowing. The latter phenomenon may sometimes abate the increase of tension; but this effect is but of very short duration, and the tension always resumes its height. There is, in fact, no necessary correlation between the cardiac slowing and the increase of tension. After from six to ten minutes, or possibly after a still longer time, the tension falls even below its normal standard. At the same time, or rather somewhat before this, the pulse regains its frequency. The powder in one instance had reached neither the arteries of the bulb nor those of the ventricle, and the brain and mesocephalon alone presented an anæmic condition. In this case the cardiac slowing was not so well marked as it was in the preceding illustrations. The tension, which *ab initio* was two grains and one-tenth, rose, however, as high as three grains and nine-tenths of mercury. In several experiments only the carotid arteries and their branches, and in others only one carotid happened to be the vessels into which the powder penetrated. In these instances no obvious modification of arterial tension was noticed. A slower heart and an amplified pulse were the only effects which could be detected. Under these circumstances, the abatement of the cardiac velocity was less marked than it was in other conditions; but this abatement, at least in M. Couty's experiments, appeared to persist longer than it did in instances of general encephalic anæmia. ("Gaz. Méd. de Paris," No. 36, 1876.) Whenever the pneumogastric nerves had been previously cut across, encephalic anæmia determined immediate cardiac acceleration. By tying the spinal cord below the first cervical pair of nerves, the same result was obtained. M. Couty, by placing a ligature upon the spinal cord, below the second or third pair, caused the velocity of the heart to be greatly abated. Again, the section of either the spinal cord or the vago-sympathetic nerves in animals determined an increase of arterial tension which varied from six to ten and even sixteen centimetres. These experiments of M. Couty's fully confirm the result previously obtained by Waller, Cl. Bernard, Brown-Sequard, Vulpian, Tarchanoff, etc. They, at the same time, disprove the conclusions arrived at by Rutherford, Schiff, and other physiologists.—("Gaz. Hebd. de Méd. et de Chir.," No. 46, 1876.)

Conclusions. — The injection of spores of lycopodium into the carotid or into the lingual artery determines primary phenomena which are due to stimulation of the grey matter at the time that it is deprived of blood. (*a.*) Since, whenever the embolism thus produced was limited to the carotid territory, the velocity of the heart became remarkably abated, the brain must be a cardiac moderator. (*b.*) Whenever all circulation was arrested in the whole of the encephalon, not only did the velocity of the heart become abated; but, in addition to this effect, arterial tension was considerably increased. The mesocephalon, independently of the cerebrum, must, therefore, contain vaso-constrictor elements, which are irregularly scattered through all the different parts of the mesocephalon. (*c.*) Whenever all circulation was suspended, both in the encephalon and in the cervical portion of the spinal cord, the increase of arterial tension was well marked, and the heart became accelerated almost from the beginning of the experiment. No gastric or enteric disturbance accompanied any of these three varieties of embolism. (*d.*) Since, by cutting across the vagi, the effects produced upon the heart by encephalic embolism could be dissociated from those produced on the vessels, these two sets of phenomena must be utterly independent of each other. They, in fact, develop separately, and according to which nervous organ has been deprived of blood. Their independence also results from this fact, that the conductors in one of these two sets of manifestations are not the same as in the other. Thus, whilst the encephalo-cardiac nerves are, in the cervical region, contained in the vagi, and whilst they all of them arise from the spinal cord, mostly from the second and third pair of spinal nerves; the mesocephalon is connected with the peripheric vessels through the medium of two sets of nerves, *i.e.*, the cranial and the spinal nerves. Either of these two means of conduction suffices of itself to make the tension vary from ten to even twenty centimetres. (*b*.) Paralytic phenomena succeed that excitement which is the primary effect of anæmia. These phenomena, in those cases in which circulation is impeded in the whole of the encephalon, are as follows: First stage.—Encephalic excitement: vascular tension increases from ten to twenty centimetres; cardiac velocity falls from two hundred to as low as fifty, or even thirty pulsations. Second stage.—From six to ten minutes after encephalic circulation has been suspended, paralysis supervenes. The heart first becomes accelerated, and then vascular tension gradually subsides. Since the spinal cord here remains untouched, this organ must be a cardiac accelerator and an independent vaso-motor centre, which is liable to be modified by anæmia, asphyxia, etc. Third stage.—After from thirty-five to fifty minutes subsequently to the production of encephalic anæmia, the spinal cord also becomes paralysed, arterial tension then becomes nearly *nil*, and in the whole of the vascular system circulation gradually becomes arrested. This spinal paralysis is the result of the abatement of tension and of consequent deficiency of circulation and nutrition in the grey matter of the cord. Here, as well as after destruction of the myelencephalon, the peripheric blood-vessels are completely paralysed. The capacity of the vascular system accordingly becomes increased. The consequence of this enlargement is that the blood is no longer in excess in the arteries, and that arterial tension subsides. The suspension of circulation in this case is exclusively due to this increase in the capacity of the vascular system and to the consequent fall of tension. Although the heart no longer receives any blood, this organ, for from eight to twelve minutes after the tension has begun to fall, keeps on contracting with its usual regularity. Its velocity then abates, and within a lapse of about from thirty to forty minutes all cardiac contraction is at last suspended. It is through anæmia and consequent deficiency of nutrition of the cardiac tissue that the paralysis of the peripheric vessels determines this disturbance of the cardiac rhythm. In this stage of paralysis of the nervous centres, the suspension of respiration could neither arrest the heart nor increase the tension. This suspension, however, would determine violent and permanent stimulation of the stomach and of the intestine. No disturbance of these organs occurs during the two first stages. It is, therefore, through the agency of the myelencephalon that, with regard both to the heart and to the blood-vessels, asphyxic phenomena are determined. It is, as concerns the intestine, through the medium of the ganglia that these symptoms develop. The sympathetic system consequently presents two different sets of muscles; the one consists of those muscles which are directly connected with the nervous centres, but which at the same time can, like the heart, function independently of these centres; the other set is composed of those muscular organs which, like the intestine, are almost completely independent of the nervous centres.—("Archiv. de Physiol.," Nov. and Dec., 1876.)

Absorption of Free Nitrogen by Vegetables, under the Influence of Atmospheric Electricity.—M. Berthelot's experiments consisted in placing vegetable substances, such as moistened white filtering paper or a concentrated solution of dextrin, in a system of tubes containing either atmospheric air or nitrogen pure and dry, *i. e.*, absolutely free from all trace of oxygen. In both these cases, whenever an electric current was passed through the apparatus, the organic matter was found to absorb a large quantity of nitrogen. Whether these tubes were in communication with the atmosphere or not, this phenomenon constantly took place. The different degrees of electric tension used in these experiments were exactly equal to the various degrees of atmospheric electricity, and ranged from the minimum of intensity up to those doses which produce lightning and thunder. Whether the atmospheric air which was used were damp or dry did not matter; but it was only under the influence of very strong tension that any trace of nitrous products could be obtained. In the case of feeble tension, no nitrous or ammoniacal products could be detected. Again, no ozone could be found in those tubes which contained pure oxygen, and which were submitted to only feeble electric tension. Again, feeble tension, whenever nitrogen with acetylene or other hydrocarbides was used, failed to determine the formation of hydric cyanide. Lastly, M. Berthelot also ascertained that neither nitrogen nor hydrogen assumed any permanent electric or allotropic character, analogous to that of ozone with regard to oxygen. In order to combine, therefore, both nitrogen and organic matter or hydrogen must be simultaneously acted upon by electricity. These experiments show that atmospheric electricity, the action of which is never suspended, is a natural cause of direct absorption of nitrogen by vegetable tissue. Under the influence of either kind of electricity this absorption is equally active; and, even when electric tension becomes too feeble to produce any trace of ozone or of acetylene, this absorption is still well marked. This phenomenon, however, requires a longer time for its production under weak than under strong tension. Nevertheless, the lowest tension suffices to determine its development as perfectly as does the highest.—("Compt.-Rend. de l'Acad. des Sc.," Oct. 9th and Nov. 20th, 1876.)

ETIOLOGY.

Gonorrhœic Endocarditis (by Marty).—(*a.*) Gonorrhœa may give rise to inflammation of any serous membrane. (*b.*) Rheumatism, although present in most of these cases, is by no means necessarily the intermediate agent between the primary affection and the serous complication. (*c.*) In those very few cases of cardiac implication which have been observed, the aortic orifice was found to be the affected part more usually than any other. (*d.*) The symptoms and accidents connected with gonorrhœic endocarditis in no way differ from those of an idiopathic case. (*e.*) The pericardium was less frequently affected than the endocardium.—("Archiv. Génér. de Méd. et de Chir.," Dec., 1876.)

Mitral Stenosis, Aphasia, Right Hemiplegia in Women (by P. Duroziez).—There is usually some connection between cardiac affections, on the one hand, and the obliteration of the Sylvian artery, cerebral softening and aphasia on the other. This fact was pointed out by Fabret. M. Lancereaux believes that cerebral accidents are oftener connected with mitral stenosis than with any other form of cardiac disease. M. Duroziez has met with forty-three female and only sixteen male cases of mitral stenosis which were uncomplicated with mitral incompetency or any other cardiac lesion, either aortic, tricuspid, or what not. He also has met with eleven female and only two male cases of tricuspid stenosis. This difference may very possibly depend upon the circumstance that insufficiency more rapidly supervenes on stenosis in men than in women. M. Duroziez has never yet, in a male patient, observed the coexistence of aphasia or of right hemiplegia with mitral stenosis. He, however, has met with eleven instances of this complication in females. In four other women, M. Duroziez found the coexistence of mitral stenosis with hemiplegia, but failed to detect any aphasic symptom. From these facts the practical conclusion may be arrived at that, on listening to the heart of a young woman who presents symptoms of either aphasia or of right hemiplegia, or of both, one will very probably detect the presence of uncomplicated mitral stenosis.—("Union Médic.," No. 65, 1877.)

Caseous Pneumonia and Aortic Aneurism (by Haust).—Owing to secondary nervous irritation, aneurism of the aortic arch very commonly gives rise to trophic disturbance of the lung, heart, pericardium, laryngeal muscles and œsophagus. The presence of pulmonary lesions, in the case of aortic aneurism, as well as in that of cancer of the œsophagus, should be referred to pressure upon the vagi rather than to inanition. These lesions, in fact, may develop previously to any well marked dysphagic symptom. Again, they are less frequently met with in cases of cancer of the stomach than in instances of œsophageal disease. Were they the results of inanition, the reverse ought to be the case. The pressure upon the vagi at first determines the development of catarrhal pneumonia. This, owing to pressure upon the pulmonary artery and to subsequent stenosis of this vessel, brings about caseous degeneration.—("Archiv. Génér. de Méd. et de Chir.," July, Aug. and Sept., 1876.)

Origin of Cells in Endarteritis.—M. Stroganow, by making sections, some parallel and others perpendicular to the surface of the aorta, ascertained that—(*a.*) The internal coat was thickened and destitute of blood-vessels. There was neither proliferation nor atheromatous degeneration ; (*b.*) The subendothelial, or superficial, layer of the internal coat was infiltrated with elements of recent formation, similar to both white and red blood corpuscles ; (*c.*) The white elements in every case outnumbered the red ; (*d.*) This subendothelial layer, in addition to these two kinds of elements, contained groups of spherical globules, smaller than red blood corpuscles ; (*e.*) No white, red or spherical globules could be detected in the deeply seated layers of the internal coat ; (*f.*) Neither the middle nor the external coat was infiltrated with these elements. Since no cellular proliferation could be detected in the inner coat of the artery, those protoplasmic elements which were found in this coat cannot, as Virchow thinks, result from the proliferation of its constituents. There is no reason to think, as Friedlænder does, that they are lymphatic cells which originate in the other coats of the vessel, and which accumulate under the endothelium. If Friedlænder's views were correct, these lymphatic cells should have been found not only under the endothelium, but some of them ought also to have been seen making their way through the internal coat ; which was not the case. These elements, therefore, must come from the blood. Moreover, no blood corpuscles were found to be extravasated in the neighbourhood of those vasa vasorum which belong to the middle and to the external coat. The inner coat, amongst the elements of which no vasa vasorum could be detected, was alone the seat of extravasation. We consequently must admit that those globules which were found in this coat had escaped from the cavity of the aorta itself. The presence of those small spherical elements which are similar to granular bodies of the blood might lead one to think that the latter elements alone escaped from the cavity of the aorta, and that they afterwards evoluted first in spherical globules and subsequently in blood corpuscles. But what is known of the development of these latter elements disproves this interpretation.—("Archiv. de Physiol.," No. 4, 1876.)

Inoculability of Tubercle.—In two previous papers, containing the record of above a hundred experiments, M. Metzquer had already sought to establish the following propositions:—(*a.*) The inoculation of tubercular products determines in the lung the formation of nodules. (*b.*) These nodules can be easily mistaken for tubercle at a certain stage. (*c.*) By sufficiently postponing the death of the animals experimented upon, one can obviate all confusion between these two different kinds of morbid products.

M. Metzquer, in a third paper related fifty more experiments. These show that the inoculated matter can be carried by two different ways, viz., through the lymphatics on the one hand, and through the veins on the other. In those cases in which the poison is carried by means of the lymphatic system accidents will but slowly develop. The development of embolic lesions, on the contrary, will rapidly follow its passage through the veins. Inoculation of an animal with any substance determines two sets of local phenomena. One, which is primary and constant, is due to the section of the venous and lymphatic capillaries by the instrument. This set consists in the extravasation of blood and lymph, which prevents the inoculated substance from being introduced into the vessels, and gives rise, in the wound and in the vessels, to the formation of a clot that envelops the inoculated matter. The other set of phenomena is subsequent to the local irritation produced by the inoculated substance, and indicates the presence of more or less intense inflammation. Both these sets result in hyperæmia of the neighbouring parts, and in softening of the coagulum and of the inoculated matter. Both these different products are taken little by little into circulation. Hence the successive formation of pulmonary emboli resembling tubercular deposits. A similar process then developes in the lung. This consists in the formation of infarctus; surrounding hyperæmia; transudation; imbibition of the infarctus; alveolar inflammation, the result of local irritation; sometimes suppuration; and lastly, in most cases, re-absorption. The effects just described, whether the matter inoculated be tubercular or not, will be constantly alike. M. Metzquer, however, believes caseous products to be, far more than grey tubercle, favourable to the development of these phenomena.

"*Is phthisis developed by the ingestion of tubercular matter?*"—This question is the subject of a fourth pamphlet, in which M. Metzquer records the following experiments:—Two dogs, and ten cats, three old and seven young, were for several weeks fed on cow's lung infiltrated with tubercle. These experiments began on February 28th. On March 26th a young cat was killed, and post mortem examination showed intestinal and pulmonary congestion and ecchymoses. Since infection had not yet developed, these pulmonary lesions undoubtedly had an embolic origin. The nine remaining cats were still fed on tubercular meat. They lost flesh, got diarrhœa and cough, refused food, and constantly lay down. On April 15th three were killed, and two died spontaneously. The necropsy of each of these five animals showed like conditions of both the lung and the intestine; such as hyperæmia, swelling and ulceration of the solitary glands and of Peyer's patches; the absence of all intestinal granulation; enlargement of the mesenteric ganglia and of the lymphatic vessels of the omentum; the presence of renal and of hepatic abscess; a healthy state of the peritoneum. The lung contained whitish nodules, which were hard and unyielding, isolated, rugose, and bulging under the pleura. With the naked eye it was impossible to distinguish them from tubercle. Microscopical examination, however, enabled MM. Tourdes, Morel, and Feltz to ascertain that the formation of these nodules should be referred to quite different causes, such as hæmorrhagic infarctus of thrombosic and possibly embolic origin; lobular pneumonia without any trace of parasites; verminous pneumonia, due to the presence of a certain nematoid helminth; and, lastly, a few small abscesses. No tubercle could be detected. Now, on April 15th, four of the cats that had been fed on tubercular meat were still alive. So were two other cats which were the subjects of comparative experiments, and one of which was fed on putrefied liver. It died on April 18th, and post mortem the same lesions were found as in those animals that had been fed on tubercular meat. The four surviving cats, kept on tubercular food, having, on April 15th, refused to eat for the three last days, were then separated from the two others. The room to which they were removed was freely supplied with air and sunlight; the consequence of which was that these animals immediately began to eat. They went on gaining flesh, and appeared to be cured. On May 6th, *i. e.*, sixty-seven days after the first ingestion of tubercular meat, they were killed. Those pulmonary lesions, found on post mortem examination, presented different stages of the healing process. All intestinal lesion had disappeared. The dogs also both recovered, and were still living.

Conclusions.—(*a.*) Tubercular matter, if its internal use be continued for a certain time, will determine irritation and phlogosis of those points of the intestinal tube in which the ingested matter remains the longest, the results of which are diarrhœa and loss of flesh. (*b.*) Local hyperæmia and impeded circulation may give rise to the formation of intestinal thrombosis, and this subsequently may produce embolism. (*c.*) The inflammation may very possibly assume an ulcerative form. Infection, in this case, and only in this, may develop, with all its consequences. (*d.*) Although some experimenters pretend that verminous pneumonia is easily known from tubercle, the most eminent microscopists agree that, in a certain stage, it is utterly impossible to distinguish the one affection from the other. (*e.*) Lastly, the ingestion of tubercular matter can, in no case, be considered as a means of inoculating phthisis. (*f.*) The remarks which apply to the ingestion of tubercular meat, hold equally good as regards that of tubercular milk.—("Bullet. de l'Acad. de Méd.," No. 47, 1876, and May, 1877.)

Cancerous Sarcocele and Phthisis (G. M. Picard).—Conclusions.—(*a.*) Encephaloid sarcocele, in certain cases, can determine the development of pulmonary cancer. (*b.*) Encephaloid disease, either of the spermatic canaliculi, the capillary bronchi, or the pulmonary vesicles, does not originate in the epithelium, but starts from the sub-epithelial connective tissue. (*c.*) Although secondary implication of the lung sometimes takes place through the lymphatics, it more usually happens through the veins. (*d.*) Cancerous emboli in the lung can possibly cause the formation of caseiform abscesses; and these may be sometimes mistaken for suppurated cancer or tubercle. (*e.*) The supervention of pulmonary tubercle on the development of cancerous sarcocele should not be urged, as it is by M. Burdel, as a proof that tubercle is the direct result of cancer.—("Archiv. Génér. de Méd. et de Chir.," July, 1876.)

Etiology of Emphysema.—The use of the muscular fibres of the bronchi consists in regulating the afflux of air into the lung. Without these fibres, whilst some lobules, during inspiration, would be filled with air, others would remain empty, as happens whenever air is artificially insufflated into the bronchi. Again, whenever the innervation of these bronchial muscles becomes impaired, as is the case in asthma, emphysema develops.—("Progrès Méd.," No. 17, 1877.)

Hepatic Affections and Pleurisy.—It is a well known fact that hepatic affections very often have much influence upon the pleura and lung. Pleural or pulmonary diseases, on the contrary, as a rule interfere but little with the liver. M. H. Petit, however, met with three cases in which the supervention of pleurisy had the most obvious influence upon the development of pre-existing hydatids of the liver. M. Verneuil, on this occasion, observes that this effect is independent of the side on which pleurisy happens to develop.—("Rev. Scientif.," No. 9, 1876.)

Diphtheroid Ulcer in Hooping Cough.—M. Delthil, from the observation of twenty-seven cases, infers that:—(*a.*) Buccal ulcer in hooping cough is very likely the primary state of a general affection, as chancre is with regard to syphilis. (*b.*) Since its seat is variable, this ulcer is inaptly called "sublingual." Indeed, M. Delthil has seen it on either side of the frenum linguæ, on the floor of the buccal cavity, on the lower lip, etc. (*c.*) Again, this ulcer has been looked upon as resulting from the act of rubbing the tongue against the teeth during the fits of coughing. Twice, however, this lesion was met with prior to dentition. Again, this ulcer invariably heals up before the stage of paroxysmal cough is over; and its presence has been ascertained in persons of every age, in adults as well as in children. (*d.*) Since buccal ulcer develops at the same time as fever and vomiting, its appearance precedes that of spasmodic cough. As soon as the fever subsides, and although vomiting and paroxysmal cough still persist, the ulcerated patch disappears. Its duration, therefore, varies from four to sixteen days. (*e.*) Its formation takes place between twelve and fifteen days from the moment of the suspicious contact. (*f.*) Its healing is followed by a scar. (*g.*) Its presence is a fact more common than is generally reported; and its duration and extent, both in depth and in surface, seem to have a relation to the gravity of the case. M. Delthil, like M. Guéneau de Mussy, compares the evolution of this ulcer to that of exanthemata, and he believes that the presence of bronchial adenopathy in hooping cough might very possibly be nothing else than the consequence of those ulcers which have been found in the bronchi, and which should be looked upon as primary lesions. The presence of these bronchial ulcers might well account for that of puriform sputa. In a word, whilst the buccal sore in hooping cough is the obvious lesion, the bronchial ulcer may be the direct cause of glandular enlargement.—("Bullet. de l'Acad. de Méd.," Feb. 6, 1877.)

Etiology of Bronchocele in the Puy-de-Dôme.—Whilst, according to M. Garrigou, endemic bronchocele is limited to those localities the subsoil of which is, with or without the presence of some pyrites, constituted of magnesic clay, M. Nivet says that:—(*a.*) Bronchocele in the Puy-de-Dôme is more common, it is true, in those districts the subsoil of which is formed by magnesic and calcic stones. (*b.*) But, in certain parts where bronchocele is not met with amongst the recruits, the subsoil also is magnesio-calcareous. (*c.*) Again, in some villages which are built upon lava, granite, or crystalline substratum, numerous cases of bronchocele are observed. M. Nivet believes that bronchocele results from the conjunction of various causes, such as low and damp localities, bad hygiene, and possibly some rheumatic affection of the vaso-motor nerves of the thyroid gland. Lastly, since acute bronchocele often ends in the chronic form, there is no occasion for separating these two different types of one affection.—("Rev.Scientif.," No. 10, 1876.)

Sudden Death from Pneumogastric Stimulation.—M. Charcot attributes to the stimulation of the vagi those cases in which sudden death, in the absence of asphyxia or of syncope, sometimes supervenes on the introduction of foreign bodies into the air-passages, or on certain operations, such as thoracentesis and ammoniacal cauterisation of the pharynx. To the same cause should be referred that loss of sensation and those epileptiform phenomena which have been observed to follow either a fit of coughing or of laryngeal irritation. In fact, M. Bert, in his paper on the stimulation of the pneumogastric nerves, says that in animals the stimulation of the central stump of the vagus can occasionally determine a kind of sideration of the nervous centres, and that this can possibly prove fatal. Likewise, by injecting irritant liquids into the pleura of a dog, M. Laborde succeeded in provoking epileptiform symptoms. Lastly, in horses, M. Trasbot, on removing nearly all the pleuritic effusion, saw these seized with fits of coughing and then fall down lifeless. On post mortem examination, however, no pulmonary congestion could be detected.—("Progrès Médic." Nos. 48 and 49, 1876.)

SEMIOTICS.

Modification of Cardiac Murmurs (by Cuffer).—Conclusions.—(*a.*) Whenever the patient passes from the horizontal to the vertical position, all intra-cardiac murmurs become modified. (*b.*) In the vertical position the intensity of all intra-cardiac murmurs is diminished. (*c.*) This diminution of the intensity of the intra-cardiac murmurs, in the vertical position, results both from some alteration in the shape of the heart, and from some variation of arterial tension, owing to which the number and the energy of the cardiac contractions may become modified. (*d.*) Not only is the intensity of all intra-cardiac murmurs increased in the horizontal position, but certain bruits can only be detected whilst the patient is lying down. (*e.*) During inspiration, all intra-cardiac murmurs become intensified.—("Progrès. Méd.," Nos. 12, 16 and 18, 1877.)

Extra-Cardiac Blowing Sounds (by P. Regnard).—Laënnec's "Treatise on Mediate Auscultation" contains the following explanation of the production of the extra-cardiac blowing sounds:—"The pleuræ and the anterior margins of the lungs, in some persons, overlap the heart and cover it completely. If, at the moment that these persons are the subjects of rather energetic cardiac beats, their chest is examined, one will find that the diastole, by compressing these overlapping tongues of lung, and by squeezing the air out of them, modifies the respiratory murmur, so that this becomes more or less similar to a bellows, or to a soft rasping sound. A little practice will enable one readily to distinguish a sound of this kind from all bellows murmurs originating in the heart itself. The latter bruits are not so superficial as the former. More deeply seated than this, the normal heart sounds can be heard; and the abnormal murmur, if the patient is directed to suspend his respiration, will much diminish in intensity, or will even disappear almost entirely." M. Regnard's experiments fully confirm this view of Laënnec's. Thus, while by applying a pneumograph to the ribs of a man who, at the same time, is holding his breath, a perfect straight line is registered, a very characteristic tracing is obtained by placing into his mouth a tube fitted to a polygraph. This buccal tracing consists of a line which is alternately ascending and descending. The apex of the ascending portion corresponds to the ventricular systole. The auricular systole is registered by that jerk which this ascending portion presents before reaching its summit. An extra-cardiac murmur, as Laënnec stated, can only be detected while the patient is making moderate inspirations. During a deep expiration, the præcordial tongue of lung recedes; the heart becomes uncovered, and the bruit subsides. Likewise the buccal tracing, in the case of a deep expiration, gives no ascending line, the murmur, therefore, results from the shock of the heart against the lung. Again, in the case of a deep inspiration, the præcordial tongue of lung becomes thicker, it is true, but it also becomes tighter, hence it cannot be so easily emptied by the shock of the heart. The murmur, consequently, should be expected to be less distinct and the ascending portion of the buccal tracing shorter and not to present any jerk, thus showing the effect of the ventricular systole to be diminished, and that of the auricular contraction to be *nil;* thus also affording a new proof of that correlation which exists between the cardiac impulse and the production of a murmur. In the erect or in the sitting posture, the apex of the heart is uncovered. In the dorsal decubitus, on the contrary, the heart so to say, sinks between both lungs, and is completely overlapped by them. In this case the buccal tracing, as might be anticipated, shows a higher ascent and a better developed jerk, thus indicating that both the ventricular and the auricular impulse are more efficient than they are in all other postures. By fitting to the trachea of a dog the straight branch of a T tube, the proof that the buccal tracing is not the mere result of the intrabuccal and intrapharyngeal arterial pulsations can be readily obtained. Respiration, in this way of experimenting, will be carried on through the straight branch of the tube, and the other branch will receive the polygraph. Now, as soon as the animal yields to the influence of curara, spontaneous respiration becomes arrested. If the cock of the T tube is then turned, the polygraph will register a tracing. This tracheal tracing will present the same characters as those of all buccal tracings obtained from human subjects, with the exception that the heart in dogs being less completely overlapped by the lungs than it is in men, the oscillations of a tracing obtained from a dog will be less well developed than those of all tracings obtained from human subjects. There is no doubt, however, that the beats of the pulmonary artery must expel a certain volume of air from the lung-cells, and must accordingly cause the polygraph to oscillate. Nevertheless, if, by injecting a small volume of air into the pleura of a dog, the præcordial tongue of lung is made to recede and thus to expose the apex of the heart, a tracing is obtained, the oscillations of which will be much less marked than they were in the preceding experiments. It, therefore, is obvious that the præcordial tongue of lung plays the chief part in the production of this phenomenon. If a large volume of air were injected, the oscillations of the tracing would be still more diminished. They would be exclusively produced by the pulsations of the pulmonary artery. That objection which is grounded upon the rarity of extracardiac murmurs compared to the great number of persons in whom the heart is more or less completely overlapped by the lungs, does not hold good. Every man, in fact, presents the conditions required for the production of tubular breathing, viz., the passage of the air through the bronchi. This bronchial respiration, however, only becomes audible under certain circumstances, such as the presence of pneumonia, of induration, etc. So it is with extracardiac murmurs. In the only three post mortem examinations which are on record (Potain and Choyau), the præcordial tongue of pulmonary tissue was found to be lined with thick pseudomembranes. In short, either the constant synchronism of extracardiac murmurs with the expulsion of a certain volume of air from the lung by the cardiac impulse points to some correlation, such as exists between an effect and its cause, or one must admit of a mere coincidence such as can seldom happen in studying natural phenomena. —("Rev. Mens. de Méd. et de Chir.," May, 1877.)

On the Carotid Pulse (by R. Tripier).—It is true that, in no disease, except aortic regurgitation, can the hand detect any delay of the carotid pulsation when compared with the cardiac systole. Nevertheless and contrary to Henderson's opinion, it is only in advanced stages of aortic incompetence that this delay occurs. Its presence, therefore, is of great import, as it is not only a sure sign of aortic insufficiency, but the more marked the delay, the more urgent is the danger. The following are the results of M. Tripier's investigations:—In four instances of aortic and in one case of innominate aneurism uncomplicated with regurgitant disease, no carotid delay could be detected. Out of twenty-six cases of aortic incompetence, the delay was well marked in eleven, slightly so in three, and absent in twelve instances. Out of thirteen patients who were examined post mortem, in seven who, during life, had presented no delay, water poured into the aorta, oozed but slowly through the semi-lunar valves; in four subjects in whom well-marked carotid delay had been observed, the water flowed rapidly from the aorta into the ventricle; and in one case, in which the carotid delay was but slight, the escape of water was less rapid than in the four preceding instances.—("Rev. Mens. de Méd. et de Chir.," No. 1, 1877.)

Intermission of Arterial Pulsation (by F. Franck).—It sometimes happens that, while the heart's action continues, no arterial pulsation can be detected. This abortion of the cardiac systole, these "stumbles of the heart," as M. Bouilland has termed them, can be referred:—*a*, to mitral regurgitation; *b*, to incomplete ventricular distension or premature systole; *c*, to want of energy. (*a*.) Mitral regurgitation. The pulse of those patients who are the subjects of regurgitant mitral disease, presents unequal pulsations. These take place at irregular intervals, and they often are separated by long intermissions. Since part of the ventricular contents, in this case, are propelled backward into the auricle, there is no wonder that the arterial beats are feeble. Whenever a cardiac intermission occurs, the ventricle becomes distended with blood. Hence, propulsion of a larger quantity of blood into the aortic system at the next systole; hence full arterial pulsation. The cardiac systole which follows this strong arterial beat, meets with a resistance which is far greater from the aorta than from the auricle. This cardiac systole, therefore, fails to overcome the resistance from the aorta. All the blood escapes backwards into the auricle, and no arterial beat is felt. (*b*.) Incomplete ventricular distension or premature systole. Whenever one systole follows too rapidly upon another, the ventricle may be empty at the time it contracts, and thus no arterial beat may be produced. If the systole, although premature, does not follow immediately upon its predecessor, the ventricle, although not filled, will have received more or less blood, and thus a more or less feeble arterial beat will be produced. (*c*.) Want of energy. If the energy of the cardiac contraction is insufficient to overcome the tension in the aorta, the only result of the systole will be to make the ventricle assume a more spherical form; and, notwithstanding the production of a cardiac beat, no arterial pulsation will be produced. Insufficient systoles of this sort, in many a case, are found to alternate with efficient cardiac contractions, so that, although the heart goes on beating, and even becomes accelerated, arterial tension falls rapidly and considerably. The state thus produced, is one of true palpitation. Owing to this mechanism, the heart oscillates in permanent systole, and presents a kind of clonic tetanus. This condition is met with in chloralised animals. It is a noteworthy fact that any cause which acts exclusively upon either side of the heart, determines disturbance in both sides, so that one utterly fails to produce that want of synchronism which some authors have described.—("Compt.-Rend. de l'Acad. des Sc.," No. 16, 1877.)

Pain in Pericarditis (by Wertheimer).—In cases of pericarditis, pain is but an inconstant symptom, the presence of which may either depend upon the existence of some complication or be the consequence of the pericardial inflammation itself. In the latter case, the pain, according as it arises from the irritation of the phrenic or from that of the cardiac nerves, may be either peripheric or central (M. Peter). Peripheric pain may possibly develop two or three days previously to the appearance of any physical signs. Its presence, therefore, constitutes an important symptom, which should be carefully distinguished from pain, the result of pleurodynia, of pleurisy, of neuralgia, etc. Peripheric pain sometimes remains localised at the præcordial region, at the epigastrium, or at the left side of the xiphoid process. It may, in some cases, radiate along the whole course of the phrenic nerve, and thus extend to the neck, to the shoulder, and to the arm. The intensity of this peripheric pain may equal that of the pain of diaphragmatic pleurisy. In pericarditis, as in diaphragmatic pleurisy, the pain may present characteristic seats, such as the point of union of the two last cartilages with the xiphoid process, and that point of the cervical region which lies on a level with the insertions of the sterno-mastoid muscles. The pain is usually equally marked on both sides; but it sometimes is more intense on the left side. However acute peripheric pain may be, its presence does not increase the danger of the pericarditis. Such is not the case with central pain, the consequence of acute inflammation of the cardiac nerves, with implication of the vagus and of the sympathetic. This central pain gives rise to disturbance of circulation and of respiration, and to general phenomena, such as those which accompany the development of angina pectoris. All the observations on record show that central pain has always been connected with exceptionally bad cases of pericarditis. Of the different kinds of pericardial inflammation, whilst the rheumatic variety is most liable to assume a painful form, those cases of secondary pericarditis which develop in the acute stage of infections, or in the chronic period of cachectic diseases, are invariably painless.—("Thesis of Paris," 1876.)

"*Cornage*," *or Roaring Respiration* (by E. Follin and S. Duplay).—This phenomenon is pathognomonic of the presence of some stricture in the course of the air tract. "'Cornage' in human subjects consists," says M. G. Sée, "in a mode of respiration harsh, noisy, distinctly audible at a distance, louder during inspiration than during expiration, accompanied invariably with dyspnœa, and frequently with dysphonia." This roaring sound, as a rule, presents a gradually increasing process. Its intensity at first does not exceed that of a slightly blowing sound, which can only be detected by means of the stethoscope or be heard at a very short distance; so that the respiration seems, as it were, sucked in and out. This slightly blowing character of the respiratory sounds successively becomes hissing, snoring, scraping, rasping; and the breathing, as a rule, becomes audible at a considerable distance. Its intensity is always greater during inspiration than during expiration; and on stethoscopical examination it is found to be most marked in some definite point of the air-tract. Whenever the larynx is the seat of the obstacle, this roaring respiration is accompanied with some alteration of the voice sounds. They become hoarse, or even cease to be audible. Whenever the trachea is affected, phonation becomes hurried and interrupted; the voice-sounds are weaker than usual, but they become neither hoarse nor inaudible. According as a main or a mere lobar bronchus is the seat of the obstacle, the normal intensity of the vesicular murmur becomes remarkably diminished in the whole lung or only in a lobe. Other abnormal respiratory sounds, such as tracheo-bronchial rhonchi and râles, tubular breathing, the blowing respiration of asthmatic, emphysematous, or cardiac patients, and palatal snoring sounds are more or less liable to be mistaken for "cornage," and *vice versâ.* But the intensity of tracheo-bronchial rhonchus never amounts to that of roaring respiration. Again, the former is audible only while the ear is applied to the patient's chest. Tracheal râles are known by their moist and irregular character, by the presence of bullar crepitation, and by their liability to become modified on coughing. Tubular breathing is an intra-thoracic phenomenon which is not audible at a distance. Another diagnostic character, which applies to all tracheo-bronchial sounds other than "cornage," is that they are equally intense during expiration and during inspiration. In asthmatic cases the presence of paroxysms and of tendency to suffocation renders the diagnosis somewhat difficult. But those paroxysms which accompany asthma generally begin during the night, and they are almost constantly followed by abundant expectoration. Again, asthmatic dyspnœa is characterized by the presence of anxious, incomplete, and short inspiration. Expiration, on the contrary, is prolonged and remarkably hissing and singing. Auscultation shows this hissing character to be present in every part of the lung, and during both inspiration and expiration. Lastly, by stopping the nostrils all palatal snoring sound at once becomes modified.—("Traité de Pathol. Ext.," vol. v., 1877, pp. 369, *et seq.*)

Plessimetrical Auscultation (by N. Guéneau de Mussy).—This mode of exploring the lung was recommended by Dr. Williams; it consists in percussing the superficial bones of one surface of the chest, while the ear is applied to the opposite surface. By this proceeding, if the lung-tissue be homogeneous, a somewhat metallic vibration will be obtained. If, on the contrary, some portion of the lung is indurated, the sound thus produced will be transmitted to the ear through the medium of structures of various density, which will render the sound less vibrating, less clear and higher pitched than that which is heard on the healthy side of the chest. Whenever the whole of a lung is indurated, the sound, being conducted by homogeneous structures, retains its vibrating character; therefore, in order to determine the exact position of the heart or the limits of the liver, it is advisable to apply plessimetrical auscultation to the base of the lung.—("Lyon Méd.,"No. 41, 1876.)

Latent Pleurisy (by Fea.)—Since Laënnec pointed out those cases in which the presence of a very large effusion coexists with the audition of respiratory sounds in the whole extent of the diseased side of the chest, two theories have been suggested in order to explain this peculiarity. Some physicians think that, by means either of the thoracic wall or of the pleuritic effusion itself, the vesicular murmur is transmitted from the sound to the diseased side of the chest. Others think that glottic sounds are conducted to the ear. The latter explanation Beau applied to the production not only of pleural blowing, but also of tubar and cavernous respiration, and of the vesicular murmur itself. According to M. Fea, this transmission of glottic sounds, in order to become possible, requires the presence of the three following conditions—(*a.*) The liquid layer interposed between the ear and the lung must not be too deep. Whenever the whole surface of the lung is bound by adhesion to the thoracic parietes, this condition is realised. (*b.*) The wall of those bronchial tubes through which the glottic sounds are propagated must be modified so as to raise the resonance of these sounds. This condition is fulfilled by the lung-tissue that is atelectasized and condensed by pressure from the effusion; but the glottic resonance, thus increased, is attenuated by transmission through the liquid, so as to resemble the vesicular murmur. (*c.*) Lastly, the bronchi of the atelectasized lung must be pervious. If these were obliterated by mucous plugs or from the effect of compression, no glottic sound could reach the ear.—("Journ. de Méd. et de Chir. Prat.," Sept., 1876.)

PATHOLOGY AND MORBID ANATOMY.

Cardiac Embolus (by E. Lancereaux).—Embolism of the right cavities of the heart is of rare occurrence. Owing to the extreme rapidity with which death follows this accident it appears to take place by syncope. In three instances of cardiac embolism, observed by M. Lancereaux, the emboli were enveloped in a thin sheath of fibrin which had coagulated at the moment of death. Their fibrinous envelope being removed, they ranged in length between eight and ten centimetres. Their shape was cylindrical and somewhat flattened. One of their extremities was smooth and cylindrical; the other ended in one or two mamillated processes which were contracted at their base, and which were separated from each other by a groove about half a centimetre deep. One of their two faces was smooth, transversely striated, and bearing the impress of valves. The other face was only rough and more or less uneven. This description accurately applies to those thrombi which develop in valvular nests, such as those present in the upper portion of the femoral veins. There is no doubt that in these three cases the clots found in the right cavities of the heart were emboli. Cardiac embolus, however, does not always present the appearance which has just been described. Thus, Velpeau met with a case of cardiac embolism, in which the migratory coagulum, which was tortuous and wound up, assumed the shape of a leech.—("Traité d'Anat. Pathol.," Vol. 1, 1875-77, p. 613, *et seq.*)

Cardiac Lesions in the Insane.—Out of sixty-one cases of insanity, M. Dufour found the heart affected with disease, either of the valves or of the muscular tissue, forty-four times. Out of the forty-four cases, hydropericardium occurred eleven times; pericarditis, with or without general adhesion, three times, and five times milky patches were observed. One of those patients, though affected with acute pericarditis, did not present any phenomenon during life which revealed the presence of this affection. The seat of lesion almost invariably lay in the left heart. Thus, the mitral valve seven times presented mere thickening, and twenty-three times it was atheromatous. The lesion, in two cases only, was limited to the mitral valve; four times it involved both the mitral and the aortic sigmoid valves; six times the muscular tissue, as well as the mitral valve, was implicated. Again, whilst in eighteen cases disease of some of the valves co-existed with morbid alteration of the muscle, in fourteen instances this was the only structure diseased. The lesion usually observed in the cardiac muscle was either fatty degeneration or simple hypertrophy. Lastly, twenty-six times the aortic sigmoid valves were the seat of lesion. With regard to the right heart, once only was thickening of the tricuspid well marked. In a few cases the right cardiac cavities were found dilated, and in fourteen instances, in which every part of the heart was increased in volume, the right cavities were less implicated in the general enlargement of the organ than those of the left side. As before said, fatty degeneration was frequently observed, and in one instance of fatty heart efforts at defecation produced rupture in a man, aged 66, who had been insane since the age of 23. The post mortem revealed congestion of the sinuses, chronic pachymeningitis, arterial atheroma, intra-ventricular effusion, and atrophy and softening of the cerebrum. A large clot filled up the pericardial cavity, the heart was loaded with fat and very friable; the anterior wall of the left ventricle, at the junction of its superior with its middle third, presented a transverse and irregular rent containing clots. The internal orifice of this laceration was larger than the external, and extended from one of the great pillars to the base of the mitral valves. The lips of this rupture were infiltrated with blood, and the valves and the coronary arteries were atheromatous. M. Dufour also met with one case of cardiac abscess, which had developed in the interventricular septum. In other instances the heart was found small and atrophied. Aortic lesions, such as atheroma, and sometimes dilatation, generally co-exist with diseased valves. Thus, M. Dufour observed one illustration of sudden death from rupture of the aorta. The morbid condition of the heart and of the vessels in most cases accounts for the frequency of sudden death in lunatics.—(" Gaz. des Hôpit.," Dec. 16, 1876.)

Tubercle (by E. Lancereaux).—According to M. Lancereaux, tubercle should not be ranged under the head of tumours any more than gummata. But tubercle, as well as gummatous and other nodous formations, is a patchy variety of caseous inflammation, *i.e.*, of that form of proliferative inflammation which differs from sclerosis in this point, that whilst caseous products are limited in their growth and in their duration, the development of sclerous tissue is boundless. Caseous inflammation, whether its process be diffuse or patchy, is the consequence of that constitutional liability to lymphatic irritation which constitutes the scrofulous diathesis. The seat of caseous degeneration, therefore, will be found in lymphatic organs. Hence, the frequency, in scrofulous subjects, of suppurated glands and subcutaneous connective tissue, the frequency of caseous osteitis—the medulla of the bones being nothing else but lymphatic tissue—and that tendency which lobular pneumonia shows in this class of persons to develop into this form of pulmonary phthisis,—caseous degeneration—the pulmonary alveoli being real lymphatic bags. Granular or nodose formation, whether tubercular or not, are usually accompanied by diffuse lesions, such as membranous tracts and neomembranes; from which products granulation only differs in showing a greater tendency to rapid destruction. Again, nodous deposits, like all other inflammatory products, are limited in their growth. The ancient authors believed tubercle to be an unorganized, more or less yellow mass, or even a mere exudation. It is an organized product of firm consistency; rounded in its shape; remarkable for its small dimensions, which seldom exceed that of a millet seed, hence the name of miliary granulation; remarkable also for its usual dissemination, not only through one organ, but through several organs at the same time. By agglomerating, miliary granulation gives rise to larger nodes, which, especially when found in the testis, the kidney, or the brain, have been mistaken for homogeneous masses. Under the microscope, the appearance of tubercular granulation varies according to its age, the tissue in which it has developed, and some other circumstances. When it first begins to develop, granulation consists of a substance which presents the closest resemblance to inflammatory tissue, or granuloma, and which, like this tissue, is composed of small rounded or slightly flattened, cells. These, after having been hardened by alcohol, are coloured by carmine, and rendered more distinct by hydric acetate. In some points they are placed close together. In others they are divided into linear groups by some bright and refracting matter, which is sometimes amorphous and sometimes irregularly fibrillous. (Grancher). — In addition to these elements, bodies are often found which are eight or ten times as large as the cells above described. In some cases these bodies, the giant cells of the Germans, consist, according to the French histologists, of cells which at first were independent of each other, but which have subsequently blended together. In other cases they are formed of intracanalicular or of intraalveolar masses. These are themselves composed of fibrino-albuminous matter, which is coloured or not with blood pigment, and which is infiltrated either with leucocytes or with nuclei proceeding from the vascular endothelium. Those few vessels which go to or belong to the tubercular granulation are usually obliterated. Hence the different appearances presented by tubercle at the various stages of its evolution. Thus, during its first stage or its growing period, miliary granulation is pinkish or greyish, and remains semi-transparent. Later on, its centre becomes opaque and successively whitish and yellowish. These changes in colouration are due to increasing anæmia of the central elements, which become infiltrated with fatty granulation, altered in their shape and atrophied. Meanwhile, the peripheric portion still retains its vitality. It is during this period that tubercle presents its typical character. In a further stage miliary granulation assumes a general yellowish hue, and forms a dry, friable, caseous mass. This consists of cells altered in their shape; of granular matter; of fatty globules; and, sometimes, even of crystals of cholesterin. In this condition tubercle is deprived of all vitality. Then, like a foreign body, it irritates the surrounding tissue and causes it to inflame and to disappear. It is in this way that ulceration develops at the surface of the mucous membranes, and that vomicæ are formed in the pulmonary parenchyma. But the granular form is not the only one which tubercle is liable to assume. It also may exist in a state of diffuse infiltration. MM. Grancher and Thaon have shown that tubercular deposit can infiltrate the lung-tissue so as to form masses presenting all the characters of hepatisation. *Vice versâ*, lobular pneumonia may very possibly, in the absence of tubercle, develop into necrosic or caseous degeneration. This process M. Lancereaux has studied in badly-fed children and youths, and in adolescents whose growth had been exceptionally rapid. The lungs of these subjects presented lens-shaped nuclei. These were yellowish, friable, granular on cutting, and, therefore, not at all like tubercular infiltration. The origin of tubercle is a much debated question. The structure of the connective tissue, as described by M. Rauvier, may possibly throw some light on this point. Thus, the connective fascicles are lined with real endothelium, very similar to that which invests the serous membranes and the pulmonary alveoli. This resemblance between the epithelium of the lung-cells, of the lymphatic sheaths and of the serous membranes, well accounts for the localisation of tubercle in the connective stroma of the different tissues, and in the vascular walls and pulmonary alveoli. The lung, in fact, is the favourite seat of tubercle; next to it, in order of frequency, range the serous membranes, the lymphatic glands, the brain, the liver, the kidney, etc. These various organs, whenever they are exposed to the same morbific influence, may either be simultaneously affected or become successively implicated by propagation of the lesion. Thus, it is a well known fact that tubercle tends to spread along the lymphatics and along the blood-vessels. This mechanism explains why the lymphatic glands in tuberculosis frequently undergo caseous degeneration.—("Traité d'Anat. Pathol.," Vol. i., 1875-77, pp. 259, *et seq.*)

Tubercle (by J. Grancher.)—Conclusions.—Tubercular granulation develops in the lymphatics which surround the infundibula, the alveoli, the bronchi, or the blood-vessels. In proportion as their lymphatic sheath becomes infiltrated with embryonic cells, the blood-vessels, the tubes, etc., become obliterated, and their wall undergoes a process of disorganisation. This mode of development is alike in all tissues, such as lung, brain, testis, serous membranes, etc. In all tubercular granulations two portions are to be distinguished, viz.:—(*a.*) A central portion, which results from epithelial proliferation, and which tends rapidly to disappear. It is this central portion which becomes caseous. (*b.*) A peripheric portion, which may become organised, and the last stage of which consists in fibrous transformation. The several kinds of granulation, such as microscopical, adult, and fibrous, do not represent different products, but various stages of one neoplasia. Thus Virchow's adult granulation is always accompanied with and preceded by younger embryonic microscopical granulation, and followed by fibrous old granulation. In addition to these three varieties that indicate the successive stages of the development of tubercle, M. Grancher admits of a fourth form, *i.e.*, infiltrated tubercle. This consists of a tissue which is identical with that of granulation, but which, instead of being collected so as to form a small tumour, is diffused along the bronchi, the blood-vessels, and the alveoli. In most phthisical cases these four anatomical forms are present. Thus, whilst besides vomicæ and lobular pneumonia, Virchow's tubercle can be seen by the naked eye, microscopical examination shows the presence of embryonic, of infiltrated, and of old tubercle. These cases of pneumonia, therefore, have a decidedly tubercular nature. Again, although in some cases of caseous pneumonia Virchow's granulation may possibly be absent, embryonic and infiltrated tubercle will always be detected. However rapidly the pneumonia may have developed, they will still be found. Hence the following conclusions:—(*a*.) Virchow's granulation is not to be considered the only type of tubercle. In fact, it only represents the adult, or intermediate stage of the neoplastic process. This starts as embryonic and infiltrated tubercle, and becomes first adult, *i.e.*, Virchow's tubercle, and finally old, or fibrous. (*b*.) Every case of caseous pneumonia, therefore, is tubercular. (*c*.) The tendency of tubercular evolution is twofold, namely, caseous and sclerous. So it is with caseous pneumonia; and, as regards its nature, this affection is identical with tubercle, from which it only differs by its secondary characters. In certain cases of caseous pneumonia the epithelium of the pulmonary alveoli remains unmodified. The epithelial cells, although they retain their normal seat and relations, become merely swollen, and change their flattened disposition into a polyhedral appearance. This state might well be called "cubic degeneration." In other cases the epithelial cells lose their relations, and become isolated and independent. They are swollen, they present a very large nucleus, and the mass of their protoplasm is remarkably increased. These cells, in other instances, become the seat of mucous degeneration, they contain mucous vesicles, and their protoplasm, at the same time, presents granulo-fatty degeneration. This process, in fact, is one of both granulo-fatty and mucous degeneration. At other times these cells are turgid and contain blood pigment, and, possibly, some chlorestine or margarin crystals. In addition to these illustrations, which are the most common, other cases are met with in which the pulmonary alveoli contain true giant cells, enclosing a number of bi- and trinucleolated nuclei. They also may present pseudo-giant cells, the centre of which is granular, and is surrounded by a belt of nuclei. These cells really are nothing else but shrunk alveoli, which are compressed by proliferated tissue. ("Gaz. Hebd. de Méd. et de Chir.," Nos. 10 and 12, 1877.) These views of M. Grancher's fully agree with the results obtained by M. Cadiat in mucous membranes; by M. Thaon, in the intestine; and MM. Cornil and Malassez, in various parenchymata. The conclusion arrived at by each of these investigators is that tubercular and caseous lesions are referable to one process.

Tubercular Adenopathy.—Although Laënnec, Rilliet and Barthez, West, Vogel, etc., admit that tubercle, in the absence of all lesion of the pulmonary parenchyma, can develop in the tracheo-bronchial glands, M. Parrot's investigations in children, aged from 1 to 7 years, never showed him one case of tubercular adenopathy without primary disease of the lung. The above named authors have been misled by the fact that extensive adenopathy often coexists with very limited pulmonary tubercle. M. Trasbot compares the facts reported by M. Parrot to what is observed in glandered horses. These never present any glandular enlargement unless the corresponding mucous membranes are diseased. When the lung tissue is healthy the bronchial glands are never found affected.—("Progrès Médic.," No. 45, 1876.)

Labial Tubercle.—M. Ledenta, at the Congress of Clermont, related a case of tubercular ulcer of the velum palati, the gums, and the lips. Tubercular ulceration of the lips had not yet been recorded. The base of this lesion was not indurated; and, like ulcerated tubercle of the tongue, it presented a sandy appearance and characteristic yellowish granulation. M. Trélat had previously suggested that this granulation is caused by some morbid alteration of the glandular openings. But to this etiology, M. Reclus objects that:—(*a.*) For the most part, those structures which are the seat of buccal tubercle are deprived of glands. (*b.*) This yellowish granulation is due to papillar degeneration, and to the presence of proud flesh lining the floor of the ulcer. Owing to that tendency to become obliterated shown by the blood-vessels in the tubercular tissue the capillaries of this proud flesh and of the papillæ become obturated, and granulo-fatty degeneration sets in them, and progresses from their periphery towards their centre.—("Rev. Scientif.," No. 10, 1876.)

Tubercular Ulcer (M. A. Laveran).—Tubercular ulcer has been the subject of numerous communications, most of which were made at the Medical Society of the Paris Hospitals. Thus, during these last years, lingual tubercle has been particularly studied by MM. Julliard, Trélat, Féréol, Bucquoy, Isambert, Maurice Raynaud, Lancereaux and Laboulbène; tubercle of the fauces, by MM. Bucquoy and Isambert; labial tubercle, by MM. Bucquoy and Siredey; and anal tubercle, by MM. Martineau and Féréol. Thus also, M. Hillairet, in a case of ulcer of the penis, suspected the lesion to be tubercular; and M. Laveran, besides instances of tubercle of the palate and of the velum, has met with two cases of tubercular ulcer of the nostrils.—("Union Médic.," No. 36, 1877.)

Meningitis in Diphtheria.—M. Pierret performed the post mortem examination of the corpse of a man who died of diphtheritic paralysis. Soon after death, and to the naked eye, the spinal cord did not present any appreciable alteration. But, after the cord had remained in a hardening liquid for a few days, abnormal adhesion of the meningean membrane became obvious. Moreover, the visceral arachnoid presented, on its surface, an exudative product in every respect comparable to diphtheritic pseudo-membranes, *i. e.*, formed by a network of fibrinous fibrillæ infiltrated with leucocytes. All the vessels which pierce the pia mater were obliterated. The patient was paraplegic;

and, on careful examination of the cord, the lesions belonging to diphtheritic meningitis were found most marked at the lumbar region. This man had also presented asphyxic symptoms, which played an important part in determining his death. The floor of the fourth ventricle, on a level with the os calami, indicated true diphtheritic inflammation of the ependyma, with implication of the subjacent parts, and probably also with irritation and lesion of the pneumogastric roots.—("Gaz. Hebd. de Méd. et de Chir.," No. 52, 1876.)

Respiratory Capacity of the Blood in the Febrile State.—According to MM. Mathieu and Maynan, the respiratory capacity of the blood corpuscles is diminished in the febrile state. But—considering that the velocity of circulation is accelerated—combustion is increased and the frequency of oxygenation compensates for its difficulty.—("Progrès Méd.," No. 32, 1876.)

Production of Leucocytes.—M. Bonne's investigations showed him that the suppurative process is invariably accompanied by an excess of white corpuscles in the blood. During the whole time that an abscess is forming, the amount of these elements is above the normal standard. But, as soon as the pus finds its way out of the body, the usual average of white globules is restored. The supervention of herpes causes their number to decrease. Their scarcity may also be connected with the presence of leucorrhœa, or with that of post partum lochia. Whenever fever depends upon the presence of some internal disease, the period of leucocytic multiplication does not seem to correspond to that of highest temperature, but to that of suppuration. Thus, whilst this multiplication, in pneumonia, is only observed during the stage of hepatisation, in typhoid fever it takes place at two different periods of the disease, namely, at its onset and at the beginning of convalescence.—("Progrès Méd.," No. 49, 1876.)

CLINICAL MEDICINE.

Cyanosis (by S. Jaccoud).—Pize has divided the anatomical causes of cyanosis into cardiac and vascular: (*a.*) Heart presenting only a single cavity. (*b.*) Heart presenting two cavities. (*c.*) Heart presenting three cavities. (*d.*) Heart presenting four cavities, one or more fistulæ persisting between them. Thus, a notch may persist at the base of the interventricular septum, or the foramen ovale may remain pervious. (*e.*) Patulous arterial canal. (*f.*) Abnormal insertion of the vessels which originate in the heart. Of these various anomalies, communication between the two auricles is the most common. Out of sixty-nine cases reported by Deguise, this anomaly was present in fifty-two. Communication between the ventricles comes next in order of frequency to interauricular fistula. Guillon has collected thirty-three cases of interventricular communication.

Vascular anomaly is the third most frequent cause of cyanosis, the commonest form of which is patulous arterial canal. According to Almagro, thirty cases of this sort are on record. Any of these anomalies may, of course, be the only one present, or two or more of them may co-exist in the same subject. In cyanosis, two facts should be taken into account, viz., the proportion in which both kinds of blood are mixed together, and the presence of some mechanical obstacle to circulation. According to the condition of the other parts of the organ, lesions apparently similar may produce different effects. The foramen ovale, for instance, may, in the absence of all complication, remain patulous, and cyanosis may not be produced. Supposing that this anomaly be complicated with stenosis of the pulmonary artery, extensive mixture of both kinds of blood must necessarily take place. Other cardiac affections, such as orificial stenosis, dilated cavities, parietal hypertrophy, etc., one or more, usually complicate the congenital anomaly. As regards sex, cyanosis has been met with in males twenty-eight times out of forty-four. It also appears to be more frequent in children whose parents present organic cardiac lesions, or who are themselves the subjects of rachitis. (Strehler.) Cyanosis, according to E. Gintrac, is more common in England, France and Germany, than it is in Italy, Holland, and Prussia. The presence of some anomalies does not always produce cyanosis. It was absent in one case in which the aorta originated in the right ventricle, and in another in which the heart presented only two cavities, viz., one auricle and one ventricle. Zehetmayer reported a case of complete absence of the interventricular system, and cyanosis never developed. Gelau saw a patient who had both patulous septum and pervious foramen ovale. This subject was rather languid during childhood, but never before the age of 20 years presented any cyanotic phenomenon. Langhurst met with a case in which the foramen ovale was patulous. The inferior vena cava, in this instance, emptied itself into the left auricle. The patient, however, never presented any cyanosis or any morbid physical sign before the age of 35. The arrest of development, therefore, does not of itself constitute cyanosis. Its effects merely consist in favouring the action of some obstacle to the afflux of venous blood into the lungs, and, consequently, to the function of oxygenation. This is the case whenever patulous arterial canal co-exists with interventricular communication. In these conditions circulation becomes languid, and carbonic acid gas accumulates in the blood. This diminution of the oxygen and this excess of the carbonic acid gas of the blood account for the presence of functional languidness and inertia. According to Tupper, that cold sensation of which cyanotic patients complain, is not merely subjective; but the thermometer, in some cases, marks only Fahr. 96°. Imperfect hæmatosis also accounts for the tendency to sleep; for the presence of habitual dyspnœa with paroxysmal exacerbations; for palpitations, lipothymia and syncope; and for the supervention of various hæmorrhages; of general convulsions; and even of sudden death, from bulbar anoxæmia.—("Traité de Pathol. Int.," Edit. V., 1877; Appendix, p. 63, *et seq.*)

Cardiac Affection in the Absence of all Valvular Lesion (by H. Bernheim).—Conclusions.—(*a.*) Organic blowing murmurs, even when they are rough, when they are accompanied with thrill, and whether they be systolic, diastolic, or præsystolic, indicate the presence of rugosities either at the orifices or on the valves of the heart. They, however, do not of themselves prove the existence of stenosis or of valvular incompetence. Softly blowing murmurs may be present in cases of mere cardiac hypertrophy, or in instances of simple functional disturbance, and in the absence of all lesion of the orifices. (*b.*) With the exception of cases of pericarditis or of myocarditis, those cardiac affections which, in the absence of all valvular disease, give rise to the symptoms of asystole, whether acute or chronic, continued or intermittent, are of very frequent occurrence. (*c.*) That theory of over-stimulation, or over-exertion, of heart, which of late has been revived in England and in Germany, and which is believed to explain the etiology of every case of asystole uncomplicated with valvular lesion, is anti-physiological, and little conformable to clinical observation. (*d.*) Cardiac disturbance results—(α) from causes either directly or indirectly interfering with some of those multiple organs which are connected with cardiac innervation; (β) from causes acting upon the vascular apparatus of either the aortic or the pulmonary system of circulation; (γ) from causes which operate upon the heart itself, either upon the endocardium or upon the pericardium, like rheumatism, atheroma, alcoholism, traumatism, etc., or upon the cardiac muscle itself, like cachexiæ, fevers, poisons, etc. (*e.*) In those cases in which functional disturbance is but a temporary or an intermittent phenomenon, the heart may remain free from all morbid alteration. If, on the contrary, the disturbance is continuous or frequently repeated, organic changes, such as hypertrophy, dilatation, fatty degeneration, in the course of time will supervene. (*f.*) Amongst those changes which follow upon cardiac functional disorder, hypertrophy is the most common. A hypertrophied heart by no means need be performing more work than a normal heart. (*g.*) Simple cardiac hypertrophy may co-exist with good general health. In some cases, however, cardiac hypertrophy, even in the absence of all degeneration of the muscle, gives rise to symptoms of cardiac debility and of slow venous circulation, very much like those of valvular disease. (*h.*) Simple primary hypertrophy may subsequently produce valvular lesions, such as sclerous thickening of the margin of the auriculo-ventricular valves on a level with their tendinous insertion. Sometimes miliary vegetation also appears to have developed secondarily near the margin of the aortic sigmoid valves. These slight lesions produce neither stenosis nor regurgitation. They, in some cases, may account for the presence of murmurs. Occasionally, however, sclerous products may be so extensively developed as to interfere with valvular function.—("Leçons de Clin. Médic.," 1877, p. 167, *et seq.*)

On the Intervention of Stenosis in Regurgitant Disease (by A. Fabre).—Although it is accurately correct to say that endocarditis cannot possibly give rise to regurgitation without at the same time producing stenosis, and *vice versâ*, it commonly happens that either of these lesions is too little developed to deserve clinical mention. Moreover, stenosis and regurgitation proceed fatally in an inverse ratio to each other; thus, if either is much marked, the other necessarily must be trivial; both, consequently, cannot at the same time be much developed. Whenever, therefore, in the same subject, both are pretty equally marked, the degree of development of each of them is but moderate. These propositions are applicable to each cardiac orifice.

(A.) Aortic Disease.—In cases of aortic regurgitation, clinically pure, a systolic blowing sound can often be detected at the base of the heart. Out of fourteen patients who were examined by Alvarenga, this was the case with nine. The consequence of this is that, in many a case of aortic incompetence, the presence of stenosis would not modify the sounds. In pure regurgitant disease, however, the diastolic murmur is constant, and the systolic bruit frequent, and both of them are softly blowing. But whenever stenosis co-exists with insufficiency, the systolic murmur is much more roughly and intensely blowing than the diastolic bruit; therefore, unless the systole be more decidedly blowing than the diastole, the presence of aortic stenosis should not be admitted. In doubtful cases, great attention should be paid to the influence of posture on the morbid sounds. The recumbent posture, for instance, sometimes increases the stenosic bruit, and diminishes the regurgitant murmurs; *vice versâ*, the effect of the erect or of the sitting posture tends more or less to deaden the stenosic murmur, and to exaggerate the regurgitant bruits. It should also be borne in mind that the more marked the valvular incompetence, the less intense is the murmur; on the contrary, the more developed the orificial stenosis, the stronger is the bruit, so that an intense double murmur indicates the presence of well-marked stenosis, combined with slight regurgitation. Again, a weak double bruit results from the co-existence of intense insufficiency with trifling obstruction. In fact, in the detection of stenosis in cases of regurgitation, auscultation of the arteries affords far more important signs than that of the heart. Since, however, a systolic murmur can be heard in the cervical vessels in stenosis as well as in incompetence, the auscultation of the carotids is but of little avail. Such is not the case as regards the femoral artery; thus, Duroziez's crural bruit is very loud in simple regurgitation, and remarkably deadened by the presence of stenosis. Again, whilst in pure regurgitant disease, the pulse is very compressible and visibly jerking, the addition of stenosis renders the pulse less compressible, less jerking, and less visible. Again, in the case of pure regurgitation, the sphygmograph traces a long vertical ascending line, the summit of which presents an acute angle; this is immediately followed by so steep a descending line that it should be called a fall rather than a descent. The tracing of associated stenosis and regurgitation consists of an ascending line which is shorter than in the preceding instance, and the apex of which, instead of an acute angle, shows a short, almost horizontal line, ending in a moderately inclined slope. Lastly, general anæmia, if stenosis be added to regurgitation, will be less marked than it is in the case of pure regurgitant disease. The presence of obstruction, therefore, renders less unfavourable the prognosis of incompetence. Consequently, the more marked the double cardiac bruit, the less severe is the case; the more intense the double cardiac murmur, the less developed is Duroziez's crural bruit. So that this law can be well drawn up, viz., that the severity of the prognosis varies in inverse ratio to the intensity of the cardiac bruits, and in direct proportion to the development of the crural murmur; in other words, the predominance of insufficiency aggravates the prognosis, and the prevalence of obstruction tempers its severity.

(B.) Mitral Disease.—Pure mitral incompetence is stethoscopically characterised by the presence of a blowing systolic sound, which is most distinct at the apex of the heart. The cardiac rhythm, at the same time, is irregular and stumbling; so that several quick and weak beats alternate with a single energetic contraction. The pulse is small and irregular. With regard to the significance of that thrill which, on palpation of the præcordial region, is felt especially towards the apex, it should be remembered that this phenomenon is sometimes met with in the case of mitral stenosis as well as in that of regurgitation. The same remark applies to the reduplication of the normal diastolic sound. Mitral obstruction is diagnosed by the presence of a dull, prolonged, and rolling diastole. This character is sometimes so little marked that it is overlooked. The diastole is followed by a very short præsystolic blowing sound, and the pulse is small, but regular. If insufficiency and obstruction coexist, which is the more common occurrence, the signs, special to each of them, may be utterly impossible to distinguish. Thus, not only the rolling sound will be too weak to be detected, but the præsystolic and the systolic murmur will be heard as though they were one blowing sound. This will be prolonged, loud, noisy, grating and most distinct at the apex.

Since the mitral valve, at the moment of the systole, becomes applied to the auriculo-ventricular orifice, the opening of regurgitation, as Racle said, is obviously narrower than that of stenosis. Again, since the ventricular action is more energetic than the auricular, the blowing sound is mostly produced by regurgitation. This accounts for its being chiefly a systolic bruit. Again, since the ventricle contracts before the auricle has completely evacuated its contents through the contracted mitral orifice, the blood cannot flow back so easily as in the case of pure incompetence. The consequence of this is that, whilst a pure regurgitant murmur is, as a rule, weak, and sometimes nil, the bruit produced by associated stenosis and insufficiency is comparatively strong. Since, as before said, regurgitation and obstruction are in inverse ratio to each other, the presence of a strong bruit in cases of stenosis coexistent with regurgitation indicates that the latter is but little developed. In mitral, as well as in aortic disease, slight regurgitation produces a stronger bruit than intense incompetence, and marked insufficiency is only possible in the absence of obstruction. In fact, as regards the production of abnormal sounds, regurgitation is nothing more than backward stenosis. The narrower the mitral opening, that is to say, the more marked the onward stenosis, the slighter is the backward stenosis, *i. e.*, regurgitation. The association of obstruction with incompetence does not preclude the reduplication of the normal sounds. In this case, however, stumbling of the cardiac rhythm is much rarer than in pure regurgitation. Owing to the difficulty with which the auricle and the ventricle each empties its cavity, stumbles can be obviated, and here the cardiac beats, as well as the pulse, are much more regular than they are in merely regurgitant cases. Moreover, the presence of stenosis, by rendering less rapid the production of arterial anæmia, tempers the severity of the prognosis. This, in fact, should not be grounded so much on cardiac as on arterial examination. Here, the amount of jeopardy is in inverse ratio to the intensity of the cardiac bruits, and also in inverse ratio to the strength and regularity of the pulse.—("Gaz. des Hôpit.," Oct. 26th, 1876.)

Asystole (by Rigal).—The term asytole is not used in the sense of absence of cardiac systole, but signifies that the cardiac contraction fails to give a sufficient impulse to the mass of blood which it ought to set in motion. Whenever the systole becomes weaker and weaker, till it stops altogether, the case is one of syncope, not of asystole. Two different sets of causes may give rise to an attack of asystole, namely:—(*a.*) All causes which produce cardiac exhaustion from insufficient innervation, such as grief, moral emotions, sleeplessness, overwork, muscular or mental strain, alcoholic excess, abuse of tea or coffee. (*b.*) All causes, which, by determining fatty degeneration and atrophy of the cardiac muscle, impede the systole; such as all mechanical obstacles to circulation, one effect of which is to increase the tension of the blood within the cardiac cavities, and thus to impose more work upon the heart. Hæmatosic disturbance sooner or later produces hæmatopoietic disorder and consequent morbid changes in the blood. These changes result in bad nutrition and degeneration of the cardiac muscle. Under this head should be mentioned valvular, pulmonary, and hepatic affections. It is obvious that asystole, the result of morbid alteration of the cardiac muscle, is far more serious than asystole arising from some nervous cause. Both orders of causes, however, are often combined in the production of an attack of asystole. In young people, whose vessels are sound, vascular contraction, in many cases, can compensate for the insufficiency of cardiac systole. These subjects, therefore, are less liable to present asystole than people more advanced in age. Asystole, in fact, results from a morbid complexus, not from merely cardiac asthenia, but from cardio-vascular asthenia. The first consequence of asystole is increased frequency of the cardiac beats. These, in addition to being rapid, become irregular, as regards both their rhythm and their strength. Percussion, at the same time, shows an increase of the vertical, and chiefly of the horizontal normal dulness. Whenever the right ventricle is implicated, this increase of the area of cardiac dulness becomes especially well marked. The cardiac muscle, in fact, is hypertrophied, and its cavities have become dilated. Then, the first cardiac sound, since it results from the ventricular systole, becomes duller and duller, and tends entirely to disappear. The second cardiac sound at first remains distinct, but in the course of time it becomes considerably deadened over the aortic valves. Over the pulmonary orifice, however, this sound, owing to the high tension of the blood in the pulmonary artery, retains its intensity. The supervention of asystole modifies the pathological murmurs themselves, and these may even disappear as the cardiac contraction goes on losing its energy. Again, as the right ventricle becomes dilated, tricuspid incompetence secondarily develops; hence, the presence of a new bruit. Again, owing to the deficiency of certain systoles in propelling the blood, the radial pulse presents false intermissions. In proportion as arterial tension falls, venous tension becomes enormous and various dropsical effusions take place. At the same time pulmonary congestion and œdema of the lung supervene. The abdominal veins also become the seat of intense congestion. In certain cases, however, digestion is fairly carried on. In others, dyspepsia is most marked, and is accompanied with either constipation or diarrhœa. Some patients suffer from tympanitis, some from peritoneal effusion. Hepatic congestion may be moderately, but as a rule it is intensely developed. The spleen, on the contrary, remains small. By means of impeded circulation and disturbed hæmatopoiesis, carbonic acid gas accumulates in the blood. One of its effects is to stimulate the contractile elements of the spleen, and thus to determine, in this organ, a state of permanent muscular spasm. Icterus is often present. This may sometimes depend upon catarrh of the biliary ducts. More frequently it is due to the presence in the blood of an abnormal amount of colouring matter, resulting from decayed corpuscles. Whilst the great fall of arterial tension produces diminution of the renal secretion, excessive tension of the renal veins may very easily determine marked epithelial desquamation of the renal tubules, granulo-fatty degeneration of their epithelia, and consequent albuminuria. The prognosis, however, should be grounded upon the quantity of urine excreted per twenty-four hours, rather than upon the proportion of albumen contained in this liquid. In asystolic subjects renal secretion is, as a rule, greatly diminished. Some patients, for instance, drink more than a pint and a-half of liquid, and excrete even less than three fluid ounces of urine. Neither the increase of dropsical effusion, nor any other means of elimination, can account for this difference between ingestion and excretion. Whilst persistent anuria is a very unfavourable symptom, the restoration of urinary secretion favours the disappearance of asystole. Whether they are referable to encephalic congestion or to uræmic poisoning, cerebral symptoms develop. Intellectual depression, dulness and somnolency characterize the first stage of cerebral disturbance. Dreams and marked moral excitement then supervene. The patients become irritable and, sometimes, delirious. They show a sad mood, with a tendency to melancholia. In women, sometimes, amenorrhœa is the case; sometimes menorrhagia, metrorrhagia, repeated uterine congestion and uterine catarrh are observed. As before said, venous congestion frequently determines various dropsical effusions. These, no more than congestion, can result from impeded circulation, unless the vessels, at the same time, are the seat of permanent morbid changes which favour serous transudation. Some patients are the subjects of marked asystolic phenomena, and present but little dropsy. Others, on the contrary, in whom asystole is only slightly developed, are affected with enormous anasarca and with considerable fluid accumulation in the various cavities of the body. Independently of vascular lesions, morbid changes in the composition of the blood can account for the readiness with which dropsy, in some cases, supervenes. These changes do not result from asystole; they are the consequences of chronic cardiac disease. They consist in a diminished proportion of the albumen and salts of the blood; a reduced number of the corpuscles; and a greatly increased proportion of the water. The proportion of the fibrin does not vary.—("Gaz. des Hôpit.," Nos. 16 and 18, 1877.)

The Heart in Epilepsy (by V. Magnan).—Let a dog be placed under the influence of absinthe, and then let its femoral artery be made to communicate with a hæmodynamometer. During the tonic period of poisoning, cardiac action will be rapid and blood tension will be increased. During the clonic period the heart will become slow and the tension will fall. Therefore the heart, which, during the former stage, is tetanized, presents, during the latter, a tendency to syncope. These remarks explain the mechanism of sudden death, and they also account for its greater frequency during the period of clonic convulsions. Again, polygraphic tracings at first show a tetanic state of the muscles, and subsequently indicate muscular relaxation. But M. Magnan cannot admit, as M. Voisin does, that the pulse, after an epileptic seizure, gives any pathognomonic tracing. In fact, the sphygmograph, in this case, registers a tracing like that obtained from a sound subject who has just performed any violent or prolonged exercise.—("Progrès Médic.," No. 16, 1877.)

A case of Cheyne-Stokes' Respiration (by C. Biot).—A man aged 57, rather tall, lean and pale, was first seen on September 30th, 1876, when he presented intermissions of apnœa and orthopnœa. The average duration of an apnœic period varied between seventeen and eighteen seconds; that of a fit of dyspnœa from forty to forty-three seconds, during which lapse of time twenty-eight respiratory movements were observed. The suspension of respiration always supervened while the chest was in the state of expiration. This state, however, was not complete; a certain volume of air being still retained within the thorax. During the period of apnœa the patient showed a tendency to fall asleep, and his face became slightly cyanosed. Both cyanosis and tendency to sleep disappeared during the respiratory periods, the want of sleep then making the patient crave for hypnotics. The history of the case was void of all morbid antecedent; no rheumatism, no cerebral hæmorrhage, no syphilis. The patient affirmed that the duration of his disease did not exceed a fortnight. He never before had suffered from any difficulty of breathing. He denied the presence of all cephalalgia; and one could not detect any cervical tumour which might have been compressing the vagi. The examination of the heart showed energetic action; strong beats in the whole extent of the lower portion of the thorax; marked epigastric pulsation. The cardiac apex was somewhat difficult to feel; its impulse seemed to be most distinct in the fifth interspace, below and outside the nipple. The præcordial dulness appeared to be slightly increased vertically, but not transversely. First sound somewhat louder than second; both partly masked by a slight, undecided, blowing double murmur. As one proceeded from the apex to the base of the heart, this double bruit became more and more accentuated. Its maximum of intensity lay on a level with the third cartilage. In this point both normal cardiac sounds were completely masked by an intense rough, blowing double murmur, louder during diastole than during systole. Diagnosis: aortic stenosis and incompetence, with slight mitral insufficiency. Arteries very atheromatous, forming hard, tortuous strings. Owing to this condition, Corrigan's character of the pulse could not be easily perceived. Duroziez's blowing double sound, however, was very distinct in the femoral artery. Every cardiac pulsation was transmitted to the radial artery with the normal interval. The pulse averaged ninety-six; slight jugular pulsation. The sphygmographic tracings were not very characteristic, owing to the presence of atheroma. Thus, the apex of the ascending line was converted into a horizontal line of a certain length; and, although very strong pressure was employed, that bend which is the usual sign of aortic insufficiency was but little marked. Whilst, during a period of apnœa, which lasted eighteen seconds, the tracing showed thirty-six arterial beats; during the following dyspnœic period, the duration of which was forty-nine seconds, only eighty-two pulsations were registered. Cardiac contraction, therefore, was obviously accelerated during the apnœic period, and retarded during that of dyspnœa. M. Biot insists upon the fact that, during the four weeks that the patient was under his care, pneumographic and sphygmographic tracings were taken at, at least, twenty different times, and the characters of the tracings never varied. They should, therefore, be held to be error-proof. As the patient had not had proper sleep for more than three weeks, forty-five grains of chloral were prescribed *ter die.*

October 2nd: The night was perfectly good; not only was the patient able to sleep, but, in the morning, he still was very somnolent. Pneumographic tracings showed the apnœic period to be reduced to from ten to twelve seconds. The patient himself said that he felt greatly improved. It should be mentioned that, whenever the chloral was suspended with an experimental view, the patient got worse, and energetically insisted upon again having his first medicine given to him.

October 4th: Marked œdema of the lower limbs; no albuminuria, but the urine contained an excess of hydric urate, and only two ounces and a-half of urea per litre.

October 6th: No permanent cyanosis, but some slight pallor of the face. The patient affirmed the period of dyspnœa to be more painful than that of apnœa. In fact, he presented some degree of general insensibility during the apnœic stage. Nevertheless, whatever region was examined, and however slightly the part was touched with a blunt pin, local sensibility was found perfect. The finger failed to detect any difference of the pulse between the period of apnœa and that of dyspnœa. The tracing, however, showed that, in the apnœic state, the bend of aortic incompetence was more marked than in the dyspnœic condition. On the other hand, the velocity of the pulse was greater during the stage of apnœa. Arterial tension, therefore, appears to have been lower during the apnœic than during the dyspnœic period.

October 8th: The chloral mixture, which, during two days, had been suspended, was again prescribed; for the difficulty of breathing had much increased, notwithstanding the administration of digitalis, which did not apparently modify the condition of the heart.

October 9th: Marked improvement; sleep during the night; respiration better. Instead of chloral, seventy-five grains of aqua laurocerasi were prescribed.

October 10th: Respiration worse; apnœic period longer than during the preceding days, lasting twenty-two seconds. Forty-five grains of chloral were administered.

October 12th: Twenty-eight pulsations during an apnœic period of fifteen seconds; twenty-four, during a similar lapse of dyspnœa.

October 14th: In the morning, slight mental confusion. The patient said that his sight for some time had become somewhat dim. The pupils, during the period of apnœa, were contracted; during that of dyspnœa, they were dilated.

October 15th: Sudden attack of generalised and intense conjunctivitis with puriform secretion. This state, in spite of various treatments, persisted to the last.

October 17th: Œdema of the face began to appear; subdelirium during the day; so much worse at night that the patient, unconscious of his doings, talked loudly, left his bed and walked in the ward.

October 18th (evening): Apnœic period lasting eighteen seconds, during which time thirty-five systoles took place. Dyspnœic period lasting fifty-five seconds, during which the heart contracted ninety-three times. Cardiac acceleration began at the moment that the respiratory movements became superficial; it then went on increasing during the stage of apnœa, and it decreased with the re-establishment of respiration, and not subsequently to a few respiratory movements, as stated by Bernheim. Algor of the hands and face; cold perspiration.

October 20th: The patient insisted upon leaving, but he eventually stayed in the hospital.

October 21st: Apparent improvement. The patient was able to read without great difficulty. While he was reading or talking, or his attention was anyhow excited, the period of apnœa did not recur. This circumstance is in perfect accordance with the general law that the stimulation of the peripheric nerves favours the performance of respiration. The patient, whose mind was slightly confused, did not notice the intermissions of apnœa and dyspnœa. All he did was to complain of some vague pain during dyspnœa.

October 22nd (evening): Duration of apnœa thirty seconds, during which fifty-five systoles were observed. Duration of dyspnœa, forty-five seconds, during the thirty-first of which the heart beat forty-seven times.

October 25th: General prostration; cyanosis and algor manuum; subdelirium, even during the daytime; carphologia.

October 27th: Duration of an apnœic period, thirty-five seconds.

October 28th: About half-past one o'clock, a.m., the patient died, without the nurse, whose duty it was to watch him, having noticed any change in his state. No post-mortem allowed.

Comments.—From these observations it appears that, contrarily to Filehne's assertions: (*a.*) The pupils contracted during apnœa, and dilated during dyspnœa. (*b.*) During the apnœic stage the cardiac beats were accelerated. (*c.*) During apnœa cyanosis was the most marked. (*d.*) Under the influence of chloral, the duration of apnœa was reduced from seventeen or eighteen to ten or twelve seconds.—("Lyon Médical," No. 50, 1876.)

Pulmonary Congestion in Rheumatic Fever (by Bernheim).—Those pulmonary symptoms which are liable to develop in some cases of rheumatic fever should be referred to local, and sometimes to general congestion. Pulmonary congestion, in fact, is of very common occurrence in rheumatic fever. Both lungs may be implicated, and death may rapidly supervene. More usually, the congestion is localised, and so little developed that its presence can be detected only by most careful investigation, and may be easily overlooked. The apex of the lung is the favourite seat of rheumatic congestion. Rheumatic pulmonary congestion, like rheumatic joint affection, assumes an erratic form. Thus, to-day, it may be found below the right clavicle, and to-morrow it may have moved to the left. Pulmonary congestion, as a rule, is accompanied with arthritis. The former, however, may possibly be the first manifestation of the rheumatic diathesis, and it may precede the supervention of the latter by several days. No marked correlation appears to exist between the intensity of fever, arthropathy and pulmonary complications. In some instances, in proportion as pulmonary symptoms develop, the arthritic phenomena subside, or may even disappear altogether. But this is far from being always the case; both the pulmonary and the arthritic complication may evolute conjointly, and the intensity of the former may be such as to become the more prominent feature of the disease. In cases of rheumatic fever, true pneumonia, *i.e.*, hepatisation, is rarely met with. Many instances which have been given as illustrations of rheumatic pneumonia, are examples of mere congestion of the lung. A noteworthy fact is, that, whilst pulmonary congestion is so common a complication of the acute form, it is of very unfrequent occurrence in chronic cases.—("Leçons de Clin. Médic.," 1877, p. 494, *et seq.*)

Pulmonary Embolism (by E. Lancereaux).—Pulmonary embolism is far from being so fatal as cardiac embolism. Out of seventy cases of the former, M. Lancereaux met with only five instances of rapid, not sudden, death. In these the fatal termination did not take place until at least ten minutes from the production of the accident. Whenever the case proves rapidly fatal, unless the trunk of the vessel be plugged, several emboli are found occupying some of the branches of the pulmonary artery. In those cachetic subjects who, whether tubercular or cancerous, have been affected during life with thrombosis of the limbs or of the right cardiac auricle, it is usual to find emboli, either free or adherent, on a level with the dichotomisation of the secondary and tertiary arterial branches. Their presence, no doubt, can disturb hæmatosis, but it does not suffice to produce sudden death. An embolic clot occupying the trunk or either main division of the pulmonary artery is not attached to the vascular wall. It is usually enveloped in recently coagulated blood, and, were it not for its small volume, it would not differ at all from a cardiac embolus. Those smaller emboli which occupy the bifurcation of lesser twigs, are free whenever they are recent. In the course of time they become adherent, with the exception of those cases in which they are coiled up; these emboli are usually cylindrical, they are also brown or yellowish, and marbled; whilst one of their extremities is conical, the other is ragged, excavated, or even terebrated. These characters apparently indicate that any embolus which presents them is the migratory end of a thrombus, extending from some collateral into a main vein. The embolus, in other cases, is flattened, transversely striated, and bears what appears to be the impress of the columnæ carneæ of the cardiac auricle. This circumstance is suggestive of its having probably originated in the heart. In the course of time, every embolus, whatever its origin, undergoes the following changes:—On the one hand, a secondary clot becomes deposited on and added to its distal extremity; on the other, its presence, like that of all foreign bodies, irritates the arterial wall, the endothelial and probably also the subendothelial layer of which are thus caused to proliferate. 'In this way young elements are formed; these gradually develop into elongated fusiform bodies, and eventually become fibrillous connective tissue. This neoformation begins between the embolus and the arterial wall, and extends on the surface rather than into the deeply-seated layers of the plugging clot, to which it forms at first a kind of cap, and subsequently a complete sheath. After a time, which need not be very long, the embolus becomes partially adherent, and it gradually becomes surrounded with an organized or even vascular membrane. At this period of its evolution, to decide whether a pulmonary clot is autochthone or migratory, is a very difficult point. The only two reasons which could possibly be invoked in favour of the coagulum being an embolus would be—first, the circumstance that the inflammatory processes developed in the arterial wall were distinctly limited to the neighbourhood of the clot; and second, the coexistence of some venous thrombosis. At the same time, the red corpuscles contained in the clot become, little by little, destroyed. Their colouring matter infiltrates into the interstices of the new elements, where it assumes the appearance of amorphous granulation, or of rhomboidal crystals. Whether it becomes diffused or reabsorbed, this matter sometimes disappears, at least partially. The white globules undergo similar changes. They become granular, and this granular matter afterwards becomes gradually disintegrated. The fibrin also presents important modifications; its fibrillæ assume a dark greyish tint, and become changed into free granulations, either proteic or fatty. These become disintegrated, and finally form a kind of emulsion. This state of disintegration, or liquefaction, is generally more advanced the older and thicker is the vascular neoformation. This state is at all events only temporary. The granular detritus thus formed becomes gradually reabsorbed by the neomembrane, and is restored to the circulation. This membrane then looks as though it were shrivelled and contracted; at other times it assumes the appearance of a hollow cylinder, in which more or less granular matter still persists, or it presents the form of a fibrous band. Its composition consists of elongated cells and fibrillous tissue, and vessels are sometimes found amongst its constituent elements. Whenever this is the case, there is little doubt that the organizing process which arises from the irritation of the arterial wall, at its point of contact with the clot, is the special means which nature has provided for the reabsorption of the embolic plug. Pulmonary embolism, therefore, may possibly heal. Moreover, its curative process in nowise differs from that which leads to the reabsorption of coagula, of blood extravasated within the tissues or at the surface of the serous membranes; or from that which determines the reabsorption of those concretions which develop within the veins. According as a pulmonary embolus occupies a larger or a smaller division of the artery, its mechanical effects vary; thus, in twelve old standing cases of complete obstruction of one or more of the main branches of the pulmonary artery, M. Lancereaux failed to detect in the lung-structures any change other than a slight degree of anæmia; in fact, the numerous anastomoses of the pulmonary vessels readily develop collateral circulation. In three instances in which one of the primary divisions of the pulmonary trunk was completely plugged, the corresponding lung was found merely anæmic and collapsed. Since the obstruction of the pulmonary artery is not followed by any apparent change in the lung-structures, this vessel is not the trophic artery of the organ. Therefore, that theory in which pulmonary gangrene is looked upon as a mechanical effect of obstruction of the pulmonary artery is perfectly erroneous. The mechanical effects produced by obstruction of the smaller divisions of this vessel are more marked than those which arise from plugging of its larger branches. They consist in that form of sanguineous infiltration of the pulmonary parenchyma which is known as infarctus. Any pulmonary infarctus of embolic origin lies in some peripheric portion of the lung. It is more or less bulging into the pleural cavity; its usual shape is conoid, and its size varies between that of a florin and a crown piece. The cut surface is granular and figured with black spots. These are produced by blood extravasated into the alveoli and into the interstices of the connective tissue of the pulmonary parenchyma. This extravasated blood soon becomes altered. As a general rule, pulmonary infarctus is not followed by necrosis of the lung-tissue. The production of this accident is probably obviated by the presence of anastomoses between the bronchial arteries and the branches of the pulmonary artery. The formation of pulmonary infarctus, therefore, entirely depends upon the seat occupied by the embolus. Whenever this lies above the mouth of at least one anastomotic vessel, collateral circulation becomes established, and no blood extravasates. Whenever, on the contrary, the obstruction lies below the last anastomosis, that is to say, whenever no anastomosis is interposed between the seat of the embolus and the point where the plugged artery breaks up into capillaries, a backward flow develops behind the plug, and the production of infarctus ensues. This mechanism explains why the smaller embolic concretions are most likely to produce pulmonary infarctus. From all this it must not be concluded that every apoplectic nucleus found in the lung is an embolic infarctus. Many a case of pulmonary hæmorrhage, no doubt, should be referred to some cause other than embolism. But, in the absence of the latter, the apoplectic focus is much more extensive and is much more likely to occupy indifferently any point of the lung than it is in embolic cases. The preceding description merely refers to the mechanical effects of embolism. According as an embolus comes from a purulent, gangrenous, or other source, and is loaded with septic matter, the point of the arterial wall with which the coagulum is in contact first suppurates or sphacelates. Subsequently, this suppurative or gangrenous process implicates the neighbouring lung-tissue. Hence, according to the nature of the embolus, the production of purulent pneumonia, of abscess of the lung, or of pulmonary gangrene. In these cases the effects of embolism are twofold, viz., those which are purely mechanical arise from the obstacle to circulation in the pulmonary artery; the others, which are irritative or specific, that is to say, which are special to the nature of the embolus, consist in some chemical irritation of the arterial wall and of the surrounding lung-tissue. An embolus loaded with cancerous matter is far from possessing such active properties as those of a clot saturated with septic products. Nevertheless cancerous embolus, in some instances, appears to have been the starting-point of metastatic cancer of the lung. Again, embolus, in some cases, seems to have been the medium through which hydatids were deposited in the lung. As might be anticipated from the preceding description, the prognosis of pulmonary embolism depends entirely upon the circumstances of the case. Thus, whilst the obstruction of the trunk of the pulmonary artery would threaten rapid death, the presence of one or even of several emboli in the secondary, the tertiary, or the still smaller divisions of this vessel would, in most cases, produce no disturbance other than a slight degree of dyspnœa. If, however, such concretions were numerous, and occupied in both lungs several branches of the pulmonary artery, rapid death, as has been witnessed by M. Lancereaux, might possibly supervene on more or less violent exertion. Lastly, if the embolic plug came from some purulent or gangrenous focus, the pulmonary tissue would soon undergo morbid changes, and these, in most cases, would ultimately produce death.—("Traité d'Anat. Pathol.," vol. i., 1875-77, p. 614, *et seq.*)

Nervous Hæmoptysis.—M. Marius Carre explains, by the following mechanism, the production of hæmoptysis in certain nervous diseases which are accompanied with some distinct lesion; such as cerebral congestion, progressive muscular atrophy, and spinal paralysis; and in certain neurotic affections, like epilepsy, chorea, melancholia, and, above all, hysteria. (*a.*) Any neurosis is characterised by some exaggeration of the excito-motor power of some region of the spinal cord. This region varies with the species of neurosis. This spinal excitation is analogous to that which is artificially developed by means of galvanism or of irritant applications. By reacting upon the sympathetic system of nerves, this spinal or bulbar stimulation, whether it be from disease or experiment, produces vascular shrinking. Some, with Brown-Séquard, admit that contraction of the pulmonary arteries causes the lung capillaries to dilate and burst; hence the production of hæmoptysis. But, in proportion as the excito-motor power of the spinal cord becomes exhausted from the effect of over stimulation, temporary vaso-motor paralysis supervenes, and thus the blood is allowed to escape from the vessels. This view of Longet's, as regards the mechanism of nervous hæmoptysis, M. Carre believes to be correct in the great majority of cases. Blood, undoubtedly, may, under these circumstances, escape from any other organ, such as the stomach, the intestine, the bladder, Schneider's mucous membrane, the skin, the uterus, etc. Hæmoptysis, however, is by far the most common of all the various forms of hæmorrhage connected with neuroses. The reason of its greater frequency is afforded by this circumstance, that the portion of the spinal cord in which the vaso-motor system of nerves originates, *i.e.*, the bulbar and the upper cervical region, is the most frequent point of origin of the functional symptoms developed in neurotic diseases. As suggested by Axenfeld, the tendency to hæmorrhage is greatly increased by those changes in the composition of the blood which occur in some neuroses, and especially in hysteria. (*b.*) In the organic diseases of the spinal cord, the destruction of sympathetic nerve-cells produces permanent vaso-motor paralysis. In these cases, the tendency to hæmorrhage is consequently still more developed than it is in neuroses. In those instances in which the brain is the seat of material lesion the explanation just given, in reference to spinal disease, applies to the mechanism of pulmonary apoplexy. Those subsequent lesions, the result of successive exacerbations, which take place around a primary nucleus of cerebral softening, may very possibly determine the development of a state of irritation, and this, through a process like that of pulmonary hæmorrhage connected with some neuroses, gives rise to blood-spitting. In most cases of nervous hæmoptysis, blood-letting does more harm than good. Its usefulness, therefore, must be very exceptional. Revulsion may sometimes be found expedient. In convulsive neuroses, the use of general baths is decidedly efficient; in these cases, hydrotherapeutics are indicated. Antispasmodic remedies, such as potassic bromide, chloral, and valerian, have not proved very satisfactory. Narcotics, either internally or in subcutaneous injection, have not been found of great avail. Belladonna, considering its action upon the vaso-motor nerves, might be tried. But, next to the general bath, arsenic and sulphate of quinine have given the best results. According to M. Gubler, the latter stimulates capillary contractility in two ways, namely, directly by its contact, and indirectly through its action upon the spinal cord and upon the vaso-motor nerves. Lastly, profuse hæmorrhage may require astringents and acids to be prescribed.—("Archiv. Génér. de Méd. et de Chir.," Jan., Feb. and March, 1877.)

Pneumonia (by H. Bernheim). — True fibrinous pneumonia is not a secondary inflammatory fever. It is a general disease, with local manifestation, an infectious fever with pulmonary complication. The name "pneumonic fever," therefore, should be preferred to that of pneumonia. In fact, the duration of the disease is not measured by that of the pulmonic affection, but by that of the febrile state. This precedes the development of all local symptoms, and as soon as feverishness disappears, although the physical signs still persist, the patient is cured. The sudden irruption of the disease, with a sharp brush of rigor, is most similar to that of eruptive fevers. Again, in pneumonic cases, as well as in those of eruptive fever, the thermometer shows a definite cyclic evolution.

Neither traumatism, abscess, fibrous degeneration of the lung, nor catarrhal pneumonia, present that cyclic evolution which is common to fibrinous pneumonia, and to infectious fevers. The section of the vagi or that of the sympathetic nerves can no more produce fibrinous pneumonia than can traumatism or pulmonary hæmorrhage. It can only determine the development of broncho-pneumonia. The former, therefore, is not mere inflammation of the lung, but it is a special acute process of the pulmonary tissue and the local manifestation of a general cause. In fact, constitutional symptoms, in many a case of fibrinous pneumonia, are the main features of the illness. Moreover, prodromata, such as cephalalgia, muscular depression, digestive disturbance, etc., not unfrequently herald the invasion of the disease, *i. e.*, the initial rigor. Such cases, at their onset, can very easily be mistaken for incipient gastric, or typhoid, fever. In fibrinous pneumonia, the persistence of pyrexia during convalescence and the fall of the temperature by "lysis" are also of occasional occurrence and assimilate this affection to typhoid fever. Lastly, whilst tubercular subjects are most liable to contract catarrhal pneumonia, acute fibrinous pneumonia is very rarely indeed met with in these patients; so that the fact of having been affected with fibrinous pneumonia appears by no means to constitute a predisposition to phthisis.—("Leçons de Clin. Médic.," 1877, p. 17, *et seq.*)

Pneumonia and Diabetes (by M. Lécorché).—Whilst chronic or subacute affections of the chest, such as bronchitis, emphysema, asthma, phthisis and pulmonary gangrene, often are the cause of temporary glycosuria, in the case of pneumonia this phenomenon is never observed, or if it happen to be so, this will be during the stage of defervescence. This difference is easy to explain, for, whilst, in pneumonia, the height of the fever checks the hepatic secretion and consequently the formation of glycose, in the chronic affections above mentioned the diminution in the quantity of oxygen absorbed accounts for the incomplete combustion of the normal sugar. Not only is this theory demonstrated by the fact that it is only in the course of those chest diseases in which the absorption of oxygen is most impeded that glycosuria is met with; but it also is established by the circumstance that the mere treatment of the local affection soon causes the sugar to disappear from the urine. This result, in bronchitis for instance, is obtained by the administration of an emetic. In emphysema of cardiac origin, it follows the institution of cardiac medication. But, whilst glycosuria, the consequence of some chest disease, is slight and temporary, and never ends in diabetes, diabetes not very exceptionally becomes the occasion of a most severe form of pneumonia. In diabetic subjects most trivial causes may very possibly produce inflammation of the lung. In this class of people, pneumonia, after it has once been contracted, shows the greatest tendency to recur. For this reason, patients affected with diabetes should not expose themselves to the fatigue of a journey. In them, lobar pneumonia usually sets in insidiously; as a rule, in the absence of all pain in the side, and, possibly, without rigor. Rusty sputa, however, are observed, and dyspnœa may be so intensely developed as to cause the patient's death as early as the second day of the disease. To this dyspnœal form of pneumonia M. Bouchardat has given the name of "Pneumonie foudroyante." The development of general œdema of the lung accounts for the rapidity with which death supervenes. Pneumonia slightly raises the temperature, which, in diabetes, is well known to be below the normal standard. The presence of sugar in the rusty sputa can be detected. These, even when pneumonia, as it sometimes happens, ends in gangrene, may be free from all fœtor. Lobar pneumonia, at other times, ends in resolution; oftener, perhaps, it becomes caseous; hence the formation of pulmonary cavities, resembling tubercular vomicæ. In pseudolobar pneumonia no fibrinous infarctus is found in the pulmonary vesicles. These only contain hyperplasic cells. This form of pneumonia is observed in the early stage of diabetes. It is ushered in by rigor and fever. The temperature rises, but hæmoptysis and sweats are absent. Pneumonia, like tubercle, causes polyuria and glycosuria to decrease; but it fails to obviate the other complications to which diabetes may give rise. Its supervention does not call for any modification in the treatment of diabetes. It should be remembered that, in addition to pneumonia and tubercle, other pulmonary complications, such as congestion, œdema, and pleurisy accompanied with serous, membranous, or purulent effusion, as well as gangrene, may occur in the course of diabetes.—("Traité du Diabète," 1877.)

Tubercle and Diabetes.—Although M. Lécorché believes that many of those pulmonary cavities which are found in diabetic people are of a nature merely inflammatory, he teaches that, in a still greater number of cases, the origin of these lesions is tubercle. It is more usually in patients aged from 15 to 20 that diabetes gives rise to tubercle. In children and in aged people this complication, as a rule, does not develop until two or even three years from the beginning of diabetes. In adults it supervenes as early as from five to six months after the onset of the glycosuric affection. It is also quite true that tubercle is far more liable to complicate diabetes in the case of poor than in that of well-to-do patients. Nevertheless, the opinion of those who deny its occasional occurrence in the latter is erroneous. The only feature special to tubercle connected with diabetes is the rapidity of its evolution. The duration of the disease rarely, however, is less than six, and it may very possibly exceed eight months. Instead of making incessant progress, the tubercular disease sometimes proceeds by successive deposits, and in the meantime the lesions remain quiescent; hence the comparatively protracted duration of the disease. Here we may well expect to find unmodified the local features of typical tubercle, viz., preference for the apices of the lung, dull percussion, auscultatory signs, local complications, such as bronchitis, pulmonary congestion, inflammation, and even gangrene; distant lesions, namely, laryngeal, hepatic, renal, enteric and peritoneal tubercle. General symptoms, however, do not supervene until a comparatively advanced stage. The onset of the pulmonary complication, therefore, must be expected to be insidious. Hæmoptysis may occur, although it is less frequent in diabetic than in common phthisis. In diabetic tubercle, however, the sputa, before the disease has reached an advanced stage, do not assume that characteristic appearance which is indicative of the formation of a vomica. The presence of sugar in the sputum is a fact easy to ascertain. If sweating be present, which rarely is the case, it will be far less profuse than in ordinary consumption. Again, the evening exacerbation of symptomatic fever is somewhat less marked in diabetic than in common phthisis. In the last stage of the former, the febrile state not unfrequently causes both polyuria and glycosuria to diminish, and sugar may possibly even entirely disappear from the urine. In diabetic tubercle, provided the fever do not run too high, the appetite in many instances remains good almost to the last. Extreme emaciation, nevertheless, is invariably present. It is scarcely necessary to say that the supervention of tubercle can by no means shield the patient from those manifold complications which are connected with diabetes; and the fact that the tubercular diathesis can produce secondary glycosuria is well known.—("Traité du Diabèté," 1877.)

Chronic Pseudo-membranous Bronchitis (by P. Lucas-Championnière).—To the naked eye, some redness and marked thickening of the mucous membrane are the only lesions which can be detected. Although false membranes are oftener found in the smaller bronchi, they may very possibly extend to the main bronchi and even to the trachea. They are constituted of soft matter deposited in concentric layers. They never present that reticular disposition which belongs to fibrinous deposits. But their appearance, like that of mucous and albuminoid formations, is uniform and almost hyaline. Their colouration by hydric picrocarminate shows that their structure is not alike in every layer. Thus, the colouring matter sometimes deposits in streaks and sometimes in patches. Its arrangement, whether in streaks, in infundibula, or in tubules, seems to point to some muco-albuminoid origin. It appears as though glandular casts had previously been thrown into the bronchial tubes, where they became the nuclei of subsequent mucous deposits so as to produce complete plugging of the air-tubes. Chronic pseudo-membranous bronchitis has been met with at every age. Its occurrence is more frequent in men than in women. Although it may supervene in the midst of perfect health, it more commonly occurs subsequently to debility, to bronchitis, either acute or chronic, to emphysema, and to pulmonary tubercle. The patients are seized with fits of intense dyspnœa. This is accompanied with substernal pain and violent cough, which may, for several hours together, recur in almost uninterrupted paroxysms. At first nothing, except a quantity of viscid and ropy sputum, is expectorated. But, consecutively to violent and prolonged coughing, false membranes are partially detached. These are expelled either by themselves or mingled with mucous or with blood, so that they sometimes may escape unnoticed. More or less abundant hæmoptysis may very possibly be observed, and death may take place from excessive dyspnœa. After the false membranes have been expelled, the dyspnœa almost immediately disappears, and the patient, in some cases for a very long time, remains undisturbed until a new paroxysm supervenes. Dyspnœa not unfrequently precedes by a few hours the supervention of the paroxysms. Some patients do not present any paroxysms. In this case, the nature of the sputum is the only character which distinguishes the form of the disease from simple chronic bronchitis. Again, whilst the general health of some patients may remain apparently unimpaired, others become weaker and weaker, until they gradually sink into a state of general debility and exhaustion from the slow but incessant progress of the disease. Death, as before said, may supervene to a paroxysm of dyspnœa. More commonly, however, pseudo-membranous bronchitis is not a fatal affection, but it may, for a very variable length of time, last on in a stationary condition. The false membranes should be carefully examined for; not only because they are sometimes readily mistaken for hydatid formations, thrush products, clots, etc., but also because they are most easy to overlook. In their absence from the sputum, suspicion should be awakened by fits of suffocation occurring in the course of apparently simple bronchitis. Again, the absence of all vesicular murmur in a limited portion of the chest, although by no means a pathognomonic sign, should be considered a very important one. Lastly, the presence of "flag sound," in one instance, and in another that of crepitus similar to the crepitation of pneumonia, have been recorded. Of all remedies, potassic iodide, hydrargyrum, and tar appear to have been the most efficient.—("Thesis of Paris," 1876, and "Rev. des Sc. Médic.," No. 17, 1877.)

Pneumothorax (by H. Bernheim).—Conclusions:—(*a.*) Perforative pneumothorax, though an exceedingly serious affection, by whatever cause produced, may possibly be cured. The fistula may become closed, either by pleuritic effusion and the formation of false membranes, which is the more common case, or by pressure from simple effusion, without any membranous products; or, in the absence of all effusion, by membranous formations and adhesion of both pleural layers. (*b.*) The fistula may rapidly close. Its duration, indeed, may not exceed a period of a few days. More often, however, it lasts a couple of months or even longer. (*c.*) Tubercle, complicated with pneumothorax, may continue to evolute very slowly, and it may even remain stationary. Nevertheless, the favourable influence of pneumothorax, the presence of which has been said to suspend tubercular development, is not demonstrated. (*d.*) If effusion supervene to pneumothorax, it will be advisable, in the absence of all urgent indication, to wait, during one or two months, for the obliteration of the pulmonary fistula. If, after this time, the effusion has not disappeared, thoracentesis should be performed. (*e.*) In the case of empyæma, repeated thoracentesis seldom proves satisfactory. Sometimes, however, iodic injection, after tapping, has given good results. (*f.*) Even supposing that the closure of the fistula were doubtful, the evacuation of the pus should not be delayed too long. The fistula, in fact, has been seen to close only after several punctures had been performed. Iodic injection, by irritating the pleura, may very possibly favour that connective neoformation which determines curative adhesion. (*g.*) In most cases, repeated thoracentesis, even when followed up with iodic injection, is found powerless against empyæma, secondary to pneumothorax. Permanent opening of the pleura by means of a large incision, *i.e.*, pleurotomy, should then be resorted to. (*h.*) Fœtor of the pus at once requires pleurotomy to be performed, and the pleura should be injected and washed out with some carbolic solution. (*i.*) In some cases, effusion consecutive to pneumothorax may for a long while remain serous. As a rule, the presence of fœtor in empyæma is rare. In those cases in which empyæma is primary, and the pulmonary fistula secondary, putrid decomposition is of more frequent occurrence than it is in the case of primary fistula. The reason of this difference is that, whenever tubercular softening produces bronchopleural fistula, the pleural cavity becomes distended with air, by which the lung is displaced. So that either the fistula may be flattened by pressure, or it may allow muco-pus to escape through it, and to fall to the bottom of the pleural cavity. Subsequently, the pleura, being irritated by the contact of air, will secrete either serum or pus. In fact, the supervention of hydropneumothorax to the formation of pneumothorax is unavoidable. This secondary effusion will accumulate in the inferior cul-de-sac of the pleura, the cavity of which, therefore, contains two fluid layers, viz., a liquid one below and a gaseous one above. These two layers are superposed to each other, not mixed together, so that the effusion is not churned up with air. If the quantity of liquid happen to increase, this will compress and displace the lung, so as to occlude the fistula. M. Bernheim has never met with a case in which pleuritic effusion, secondary to tubercular pneumothorax, was eventually expectorated through the lung.

Whenever, on the contrary, the presence of primary empyæma determines the subsequent formation of pulmonary fistula, the pus is immediately sucked up into the bronchi, and is ejected in torrents. The fistula in this case is steeped with pus, and this liquid, being continually churned up with air during inspiration and expiration, ebbs and flows within the air-tubes, so that each pus globule is, so to say, brought into contact with numberless atmospheric germs, a fresh supply of which is carried into the lung by each inspiratory movement. No wonder, therefore, that these globules rapidly undergo putrid fermentation, which spreads to the whole of the pleuritic contents. Hence, rapid supervention of gangrene and more urgent necessity of early intervention. From all this, however, it should not be concluded that empyæma, whenever it breaks into the bronchi, causes putrefaction to develop. Observations, by no means rare, are on record in which bronchial evacuation proved curative. Thus, in some instances the fistulous opening may be so narrow that the effused fluid can only escape little by little and without allowing the entry of air into the pleural cavity. In other cases, this orifice may present a valvular disposition, owing to which nothing can escape through the aperture except in the direction from the pleura to the bronchus. Again, the pleural cavity and the bronchus may communicate with each other by means of so tortuous a canal that pus can only escape into the bronchi with difficulty and intermittingly. It is chiefly in the case of free and persistent communication between the continuously secreted pleuritic pus, on the one hand, and pulmonary air, on the other, that rapid putrefaction can supervene. Lastly, the formation of fistula may be due to some corrosive properties of the pus. In this case, the surface of the lung, ulcerated and necrosed, may present several fistulæ. But the necrosed parts readily become gangrenous.—("Leçons de Clin. Médic.," 1877, p. 126, *et seq.*)

Pleurisy (by Ch. Lasègue).—Three forms of pleurisy are to be distinguished, namely:—(*a.*) Benignant pleurisy, which normally ends in recovery, whatever treatment, and especially when no treatment is instituted. (*b.*) Fatal pleurisy, in which death, notwithstanding most active medication, is almost unavoidable. (*c.*) Between these two extreme forms may be ranged a third, the main feature of which consists in the impossibility of early prognosis. These three forms of pleurisy are not mere degrees of one affection. They should be looked upon as so many diseases essentially distinct. The diagnosis between them is mainly grounded on the study of two symptoms, viz., pain and fever. (1.) Pain.—In very fatal forms, the pain is, as it were, patchy, occupying in front of one side of the chest a space at least as large, and sometimes twice as large, as the palm of the hand. Its seat, therefore, widely differs from that of the pain of ordinary pleurisy, in which the pain corresponds to the anterior portion of one or more of the intercostal nerves, and is distinctly limited to the course of these nerves. Moreover, in ordinary pleurisy, the pain sets in at the onset of the illness, simultaneously with rigor, or fever. It then goes on increasing for some hours, and generally reaches its acme within six hours. It afterwards remains stationary until it subsides, which usually happens between the second and the sixth day from the beginning of the disease. The patchy pain proceeds differently to this. Thus, although it sets in with comparatively little severity, it may persist for weeks and even for months, with scarcely any improvement. As there is no concomitant fever, the pleuritic affection is not unfrequently mistaken for rheumatism of the thoracic parieties, or for simple intercostal neuralgia. In fact, with the exception of slight dulness on percussion, and of rather weak breathing on auscultation, the physical signs are negative, and, during the whole duration of this, as it were, preliminary stage, dyspnœa is little marked. Some time or other, dyspnœa and pain rapidly become more and more intense, and physical exploration shows the presence of effusion, which goes on increasing from day to day. If thoracentesis be then performed, not only serous or sero-fibrinous liquid will escape; but, in all these cases, more or less blood will be found either mixed with the serous fluid, or forming a distinct layer beneath it. After tapping, the effusion is rapidly reproduced, and at last the patient sinks into a state of deep cachexia. It should be added that patchy pain does not exclusively belong to pleurisy. Similar pain is also met with in cases of disease of the nervous centres. But in these cases the presence of cerebral or of spinal symptoms points out the true diagnosis. In rheumatic pleurisy, another type of pain is observed. Since the rheumatic influence acts upon the costal or subcostal fibrous structures in the same manner as upon fibrous articular tissue, pain and fever from the onset are most severe. In order to obviate pain, absolute immobility of the thorax is necessary, which it is utterly impossible to secure. Pain is exasperated by coughing, by breathing, and sometimes even by deglutition, so that the patient refuses to swallow anything. These circumstances indicate a favourable prognosis. In fact, whilst pleural rheumatism is but of short duration, and usually disappears within a fortnight, pleurisy which starts from the lung lasts at least three or four times as long. Again, in rheumatic cases, pleuritic effusion is scanty. Whenever, therefore, the pain is well localised in the costal interspaces and does not spread in patches, its acuteness is an indication that speedy cure may be expected. The absence of all pain is one character of those insidious cases of pleurisy which end in hydrothorax, and which are most unyielding to treatment. Owing to the absence of pain, and to the little amount of fever, weeks may pass without the pleurisy being detected. According to Bretonneau, this latent form is very liable to result from cutaneous perspiration being suddenly suppressed. It not unfrequently follows upon a sea- or a cold shower-bath, or upon the untimely use of hydrotherapeutics. Seeing that blisters and other therapeutic means fail to cause the effusion to be reabsorbed, and the tendency to its reproduction after tapping is extremely marked, a most serious prognosis should be given. Méhu found in the liquid of this class of effusions considerable deficiency of chlorides and of mineral salts. (2.) Fever.—At the onset of rheumatic pleurisy, a sharp brush of fever, as before said, is the rule. But whilst in rheumatic cases, fever, as well as pain, is likely to retain its intensity longer than in other kinds of pleurisy, its abatement is soon followed by recovery. In ordinary pleurisy, fever and pain set in and develop conjointly. On the second or third day of the disease, at the time when the pain disappears, the fever also subsides. Nevertheless, some apparently trivial feverishness persists until complete cure. As long as the tongue remains slightly coated, the pulse somewhat frequent, and the skin rather hot; and as long as the patient complains of some fatigue and of want of comfort and of appetite, even though the reabsorption of half or even of two-thirds of the fluid may be ascertained, convalescence should not be expected to be at hand. Consequently, lest feverishness be kept up by premature feeding, the use of analeptic and tonic remedies, of very nutritious diet, of fresh air and of exercise, should be postponed until absolute and permanent apyrexia is decidedly established. Even if effusion has completely disappeared, the presence of feverishness should suffice to contraindicate the ingestion of much food and all stimulative measure. For want of observing this rule, the patient, instead of improving, would increasingly lose strength, so that not only would hope of convalescence be abandoned, but an erroneous fear that the lung is affected with tubercle might be entertained. If, however, in the absence of all mischievous indication, the febrile state goes on increasing, the supervention of some complication, such as fresh tubercular deposit, or, but much more rarely, pneumonia, should be suspected. In this occurrence, although increased feverishness be perceived by the patient, a well-marked rise of temperature is far from being always indicated by the thermometer. —("Gaz. des Hôpit.," June 24th, 1876.)

Nervous Aphonia (by S. Jaccoud).—Aphonia, from paralysis of the motor nerves of the vocal apparatus, may be due either to constrictor paralysis, *i.e.*, to paralysis of the recurrent nerve which supplies with motor power the lateral crico-arytenoid, the thyro-arytenoid, and the arytenoid muscle; or to tensor paralysis, *i.e.*, to paralysis of that external twig of the superior laryngeal nerve which supplies with motor power the crico-thyroid muscle. M. Navratil, however, from his experiments on five dogs and on one cat, concluded that the superior laryngeal nothing to do with the movements of the larynx. Be this as it may, M. Krishaber's observations show that aphonia, from some intrinsic cause acting in the absence of all material nervous lesion, and aphonia from constitutional causes, such as anæmia and hysteria, are oftenest referable to want of tension of the vocal cords, *i. e.*, to paralysis of the motor twigs of the superior laryngeal. Aphonia from other causes should be referred to want of constriction of the glottis, *i. e.*, to recurrent paralysis. From the disposition and from the connections of the inferior laryngeal nerve, one could have anticipated that the latter form of aphonia must be the more frequently observed. Clinical observation shows this to be the case. Moreover, owing to those anatomical connections which are special to the left recurrent nerve, the seat of unilateral paralysis is oftener found on the left side. In cases of tensor paralysis the vocal cords can be brought into contact with each other, but, like flagging membranes, they become depressed during deep inspiration and raised up during expiration, without presenting any vibration. In the case of constrictor paralysis, the cords lie apart and motionless. In either form of paralysis, as long as the muscles which dilate the glottis are not implicated, respiration is not interfered with. Chauveau's experiments seem to demonstrate that the crico-thyroidean muscles are not supplied with motor power by the spinal nerves, but by the pneumogastric. If this is the case, tensor paralysis should be exclusively connected with the condition of the vagi. In cases of unilateral recurrent paralysis, not only can either cord be seen lying outward and inert, but the arytenoid of the unaffected side encroaches upon the median line, and tends to place itself below the corresponding muscle of the paralysed side, and Santorini's cartilages, therefore, overlap each other. Whether the paralysis be uni- or bi-lateral, owing to inertia of the thyro-arytenoid muscle, the vocal cords, in some cases, are quivering, and their margin assumes a wavy appearance. Both kinds of electric currents have given satisfactory remedial results. In the case of tensor paralysis, both rheophores should be applied on the crico-thyroid muscles. In that of recurrent paralysis, one rheophore should be placed within the larynx, and the other over the thyroid region. Krishaber has recorded instances of nervous aphonia which were successfully treated by making a current of induction pass through some distant parts, such as the hands or the feet.—("Traité de Pathol.," Int. Edit. V., 1877; Appendix, p. 79, *et seq.*)

Laryngeal Paralysis (by G. Poyer).—The causes of laryngeal paralysis are threefold; (*a.*) General causes, such as hysteria, exposure to cold, fright, anæmia, syphilis, diphtheria, cholera, intermittent fever, various poisonings; (*b.*) Local causes, such as aneurism, bronchial adenopathy, mediastinal, cervical, pharyngeal or œsophageal tumour, traumatism of the recurrent nerve; (*c.*) Central causes, such as bulbar tumour and cerebral hæmorrhage. The general causes are by far the most common. Thus, during the year 1873, M. Fauvel treated forty-three cases of laryngeal paralysis due to general causes, and only sixteen cases referable to a local origin. Amongst the general causes, cold and hysteria are the most frequently in action. In the case of complete paralysis, the paralyzed cord is motionless; its free margin is usually seen on the median line, and it divides the glottic area in the same way as that in which the bisector line does an isosceles triangle. At the same time, the arytenoid of the paralyzed side can no longer rotate on its axis. The paralyzed cord seems to be shorter than that of the opposite side. This appearance depends, on the one hand, upon laxity, the consequence of paralysis, and on the other upon the circumstance that the posterior quarter of the length of the cord is hidden by the arytenoid. The colouration, as a rule, is normal. Whenever both cords are paralyzed, they are found as in the act of quiet respiration. At least, such was the case in all the patients seen by M. Poyer. Supposing that, instead of the constrictor, it were the dilatator muscles which were paralyzed, asphyxia would soon supervene. In those cases of double paralysis which almost invariably were imputed to hysteria, the colouration of the cords, whenever the thyro-arytenoids were not implicated, was found normal; otherwise, the cords presented a pinkish hue. Partial paralysis: (*a.*) Constrictor, *i.e.*, crico-arytenoid and arytenoid paralysis: cord either completely or incompletely motionless, assuming a position midway between phonation and respiration; free margin, crescent-shaped, length apparently shortened; colouration normal, rarely pinkish; aphonia usually complete; (*b.*) Dilatator, *i.e.*, posterior crico-arytenoid paralysis: cord motionless; free margin dividing the glottic area into two equal parts; dyspnœa; sometimes "flag-sound"; no aphonia; voice harsh and monotonous; (*c.*) Phonator: (*a.*) Thyro-arytenoid paralysis: arytenoid unaffected; impossibility of bringing into contact the middle portion of the free margin of the two inferior cords; redness of the mucous membrane; no dyspnœa; marked dysphonia. (*β.*) Crico-arytenoid paralysis: impossibility of bringing into contact the posterior portion of the free margin of the cords; speaking normal; singing impossible. The prognosis, as a rule, is more favourable in cases depending upon general than in those due to local causes. The latter, in fact, very often assume a most inveterate form. In addition to the treatment of the cause, local electrisation, in many cases, is very successful. Electricity may be applied either internally or externally. External electrisation is performed by applying the rheophores on each side of the neck, along the course of the recurrent nerves. This method succeeds only in recent cases of paralysis. In old standing cases internal electrisation should be preferred. This can be performed in two different ways: (*a.*) In one of these, whilst one rheophore is applied to the paralysed cord, the other is either placed in the patient's hand, or brought into contact with a collar which, in front of the thyroid cartilage, supports a metallic plate. (*b.*) The other method consists in placing inside the larynx a double rheophore. In nervous aphonia a great number of electric applications, repeated possibly for several weeks, is often necessary. In fright cases and in paralysis from cold, aphonia almost invariably yields to the first application. Anæmic, diphtheritic, or syphilitic paralysis is more likely to be benefited by topical, or even by caustic applications, than by electricity. —("Gaz. des Hôpit.," No. 60, 1877.)

Traité de la Diphtherie (by A. Sauné, 1877.)—In his treatise on diphtheria, M. Sauné defines this affection as a general infectious disease, transmissible by means of inhalation, contact, and, probably also, inoculation; characterised by the formation, on the surface of the mucous membranes, or on the deeply-seated layer of the epidermis, of fibrinous exudations commonly called false membranes. This definition is followed by a historical study of the disease, after which the author treats of its pathology. The lesions observed in diphtheria should be divided into two classes, viz. (*a.*) Primary or fundamental lesions, *i.e.*, the false membrane and the lesions developed in the tissues which support the membranous formation. (*b.*) Secondary lesions, which, though not connected with the membranous products, may be attributed to the influence of the diphtheritic affection.

False Membrane.—Every point of mucous or cutaneous surface is liable to become the seat of false membranes. Those mucous membranes which are not in contact with air, although they are very seldom the seat of false membranes, are not to be excepted. The false membrane is absolutely odourless. The presence of fœtor in diphtheritic angina is due to altered buccal epithelium and liquids, such as blood and pus. The proof of this is that the breath only becomes fœtid after a few days from the beginning of the disease, when blood has exuded at the surface of the mucous membrane and the false membrane begins to decay. As regards the structure of the morbid products, two theories have been proposed. According to one of them, the false membrane is the result of some epithelial transformation; according to the other, the membranous product is nothing but fibrinous exudation. M. Sauné's chief reasons for admitting the latter explanation are grounded on the fact that those pathologists who support the theory of epithelial transformation, are now obliged to admit the exudative nature of the false membranes developed in the respiratory apparatus. It is, therefore, improbable that the products formed in the other parts of the body are due to a different process. Of course, according to the severity of the case, the morbid formation, although its nature never varies, presents various degrees of intensity. Thus, the fibrinous exudation may be very slight and remain quite superficial, so that the mucous membrane may heal without presenting any cicatrix. In other cases the exudation extends more deeply, and more or less implicates the mucous membrane, a portion of which is eliminated at the same time as the morbid product. In still more severe cases, the exudation of fibrin and of young cells is remarkable for both its density and depth, so that all circulation in the invaded tissue becomes arrested. The consequence of this is sphacelus, with ashy or dark colouration of the affected parts. In addition to these differences, which depend upon the various degrees of intensity of the inflammation, others are connected with the varieties in the disposition of the local structures. Thus, the pharynx and the supra-glottic laryngeal region are lined with a thick layer of tesselated epithelium, which is strongly adherent to the mucous chorion. This anatomical disposition favours the infiltration of deeply-seated tissues. It also explains how pharyngeal false membranes, which, when the case is mild, remain superficial and little adherent, become, in severe cases, thick and strongly attached. Again, it explains how, in the absence of all gangrenous appearance, the elimination of the membranous product can be followed by partial elimination of mucous tissue. The sub-glottic laryngeal region, as well as the rest of the air tract, not only presents cylindrical epithelium cells, forming a much thinner layer than the one just described; but here the presence of that amorphous layer called Bowman's membrane, which lies between the epithelium and the chorion, accounts for the superficial disposition and the want of firm adhesion of the false membranes developed in these regions. The chemical composition of the false membrane is as follows:—(*a.*) fibrin; (*b.*) amorphous matter; (*c.*) fatty matter in pretty abundant quantity; (*d.*) mucin. According to M. Ch. Robin, the false membrane is formed by exudation of plasmin, the liquid portion of which flows away, leaving behind it coagulated fibrin. In this part of his treatise, M. Sauné describes the action of various chemical reagents on the false membrane. But, since the membranous formation is no longer considered as constituting the disease itself, but is regarded as a mere result, this description has lost much of its importance. The fungi described by the Germans are not special to diphtheritic products.

The incipient stage of the morbid process consists in the inflammation of the mucous membrane. Then fibrinoid matter transudes through the vascular walls, and so does a pretty considerable number of leucocytes. The false membrane, at first, is thin, soft and semi-transparent; but in the course of a few hours it acquires thickness and hardness. Its development in surface is centrifugal, whether it originates from one point or from several which subsequently blend together. As the exudative process continues, new deposit takes place and accumulates under the primary false membrane, and several layers are thus successively formed. Hence that stratified disposition which, in some cases, the false membrane assumes. In the gangrenous form fibrin and embryonic cells infiltrate the chorion, thus interfering with the nutrition, and causing necrosis of the infiltrated tissue. After having performed the different stages of its evolution, the false membrane either becomes detached and falls, or it softens and undergoes fatty granular degeneration. The rapidity with which the false membrane is got rid of depends upon the region in which it has developed. Thus, within the air-tract, the false membrane is superficial and little adherent, and, therefore, falls more readily than when its seat is in the pharynx, where the plastic product is deeply seated and firmly adherent to the subjacent tissue. As a rule, the expulsion of the false membranes begins between the second and the tenth, and ends between the ninth and the fifteenth day of disease. Owing to successive exudative formations, the presence of false membranes can, in some cases, be detected as late as the thirty-second day from the onset of the affection. The lesions presented by the mucous membrane and the submucous tissue, range in degree from simple hyperæmia, through œdema; infiltration with fibrin, leucocytes and embryonic cells; to ulceration and sphacelus. The margin of the ulcers is punched out, and their floor shows muscular fibres, the structure of which is not unfrequently modified. The tonsils, the uvula, the velum palati and its pillars, are more liable to sphacelus than are the laryngeal and the tracheal mucous membrane. In some exceptionally severe cases the gangrenous process implicates the subjacent areolar tissue, and even the neighbouring muscles. Multiple perforation of the velum palati was observed in a case of diphtheria uncomplicated with measles or any other affection predisposing to sphacelus. Such lesions, when recovery is obtained, are followed by retractile cicatrices, which may cause stricture and interfere with the function of the pharynx, of the larynx, or of the trachea. The cutaneous, as well as the mucous tissue is liable to present diphtheritic lesions, which may also amount to sphacelus. The Malpighian mucous layer and the superficial layer of the derm are the seat of lesions exactly similar to those of the mucous epithelium and of the chorion. The subcutaneous, like the sub-mucous areolar tissue becomes infiltrated and tumefied. In the vicinity of the diphtheritic sore, the epithelium is raised by the formation of a false membrane and of phlyctænæ usually filled with lactescent serum. The lymphatic ganglia oftenest implicated, are, in order of frequency, the submaxillary and the parotid; the cervical, especially those which lie along the sterno-mastoid muscle; the tracheal and the bronchial; and even the mesenteric. The affected ganglia may be simply tumefied and hyperæmic, or they may present a state of intense congestion, which gives to their parenchyma the same appearance as that of the tissue of the spleen. They sometimes, also, are infiltrated with abundant lactescent serosity; and, especially in cases of angina, they may undergo suppuration. The enlarged ganglia are liable to protrude into the pharynx, thus diminishing its cavity; or to compress the larynx, the trachea, the bronchi, or even the blood-vessels, thus producing œdema glottidis. Cellulitis very readily develops in the neighbourhood of the affected ganglia; and, whilst the glandular inflammation becomes arrested in its evolution, suppuration of the surrounding connective tissue not unfrequently supervenes. With the exception of those cases in which anasarca, the consequence of albuminuria, and blood effusion, are observed, the subcutaneous connective tissue, as a rule, remains healthy. Of all the local manifestations of diphtheria, angina is by far the most frequent. Buccal diphtheria is not rare, but it should not be confounded with ulcero-membranous stomatitis. Every point of the buccal cavity may become the seat of false membranes. The buccal false membranes, as a rule, are very superficial, except when they are formed on the tongue, in which case they generally leave a scar after them. Noma is a very rare complication of buccal diphtheria. In the fauces every degree of lesion, such as ulceration, suppuration, perforation, sphacelus, may be seen. Those parts of the digestive tube which are not exposed to the air, are rarely the seat of false membranes. Plastic products, however, have occasionally been found in the œsophagus, in the stomach, and even in the intestine. False membranes of the anus and of the rectum are not so rare as those of the œsophagus, of the stomach, and of the small bowel. Lastly, now and then in diphtheritic cases one happens to meet with lesions, such as diarrhœa, the consequence of some morbid alteration of Peyer's patches, and hepatic inflammation and steatosis. These various lesions are common to those general diseases which, like fevers and certain poisonings, deeply alter the organism. The whole of the respiratory apparatus is liable to be affected with diphtheria. Thus, the whole surface of Schneider's mucous membrane may very possibly be covered with false membranes. Its ulceration, however, has never been observed. With regard to the larynx, its supraglottic portion is more frequently affected than the subglottic; the epiglottis and the aryteno-epiglottidean ligaments are the parts most commonly implicated. The supraglottic region also is the more liable to ulcerate. The local false membrane very seldom suffices to produce complete obstruction of the glottis, but this passage may become plugged by some membrane fallen from the upper portion of the fauces. Asphyxia also may result from prolonged disturbance of the function of hæmatosis. Again, œdema glottidis, although a very exceptional complication, has been observed. The muscles sometimes present fatty granular degeneration, and ulceration and even necrosis of the cartilages have been occasionally seen. The trachea is liable to all the lesions found in the larynx. In addition to these, the contact of the canula after tracheotomy may produce ulceration and even perforation either of the posterior or of the anterior wall of the trachea. Again, this organ, as well as the larynx, may, subsequently to ulceration, become affected with stricture. It may also become obstructed with polypi, which are more probably papillomata of the mucous membrane than cicatricial tissue. Lastly, Latour recorded one case in which, during a fit of suffocation, the efforts of breathing caused rupture of the trachea between the two first rings.

Lung Complications.—Bronchitis, the consequence of diphtheria, may remain simple or catarrhal, or it may become exudative. The latter form is generally assumed between the second and the fifth day of the disease. It exceptionally develops after the eighth day. Broncho-pneumonia also develops during the first days of diphtheria. Its supervention, therefore, should not be exclusively attributed to the effect of tracheotomy. Of all the manifestations of diphtheria, laryngitis and, next in order of frequency, pseudo-membranous bronchitis are oftenest complicated with broncho-pneumonia. Thus, out of 121 cases of broncho-pneumonia, the presence of which was ascertained post-mortem, pseudo-membranous laryngitis was present in 119; pseudo-membranous bronchitis in sixty; in one case the plastic deposit was limited to the pharynx; and, in another, it was localised in the nasal cavity. In twenty-one out of these 121 instances of broncho-pneumonia, tracheotomy had not been performed. Every form and degree of broncho-pneumonia, from atelectasis and splenisation to suppuration, has been met with in diphtheritic subjects. Pulmonary congestion also is a very frequent complication. This may affect either lung or both of them; its favourite seat being the posterior base. Pulmonary congestion generally accompanies the presence of laryngeal or bronchial false membrane, simple bronchitis, broncho-pneumonia, pneumonia, pleurisy, pulmonary apoplexy, or œdema. Sometimes it is a late complication, the consequence of diphtheritic paralysis of the respiratory muscles. Fibrinous pneumonia is more rarely met with than broncho-pneumonia; its presence, however, has been ascertained post mortem in thirty-two patients affected with diphtheria. In nine of these thirty-two cases grey hepatisation was present; considering the rarity of grey softening of the lung in children, this result is remarkable. Like broncho-pneumonia, fibrinous pneumonia often precedes tracheotomy, and not unfrequently develops in subjects who have not been operated upon. Pleurisy is still rarer than pneumonia. Like this, pleurisy seems to be independent of tracheotomy, and co-exists with laryngeal or buccal false membrane or with some pulmonary phlegmasia. Pulmonary emphysema almost constantly follows pseudo-membranous laryngitis. Emphysema may be merely vesicular, or it may be interlobar and subpleural. Pulmonary apoplexy, the consequence of diphtheria, is very rare indeed. Its usual seat is the posterior base, where it assumes the appearance of small spots, complicated or not with the presence of real infarctus. Laryngeal and bronchial false membrane is, with paralysis of the respiratory muscles, the form of diphtheria the most likely to determine the supervention of pulmonary apoplexy. It would, however, be an error to believe that asphyxia is the only cause which produces apoplexy in the lung of diphtheritic patients. In fact, in diphtheria, as well as in severe fevers, such as typhoid, variola nigra, hæmorrhagic measles and scarlatina, pyæmia, and uræmia, the general infection predisposes to pulmonary apoplexy. The presence of pulmonary gangrene has been noted in a very limited number of cases. Œdema of the lung is not quite so rare as gangrene. Œdema may result either from the presence of some other pulmonary lesion or from the morbid condition of diphtheritic blood. In the latter case, œdema pulmonis usually coexists with œdema glottidis, renal alteration, and albuminuria. The organs of circulation also are implicated in the morbid process. Pericarditis, however, appears to be extremely rare. In some cases, ecchymoses are found at the surface of the pericardium and of the endocardium, or even in the cardiac muscle itself. This muscle not unfrequently becomes the seat of fatty granular degeneration. MM. Bouchut and Labadie-Lagrave think that endocarditis is common in diphtheria. M. Sauné believes, with M. Parrot, that this complication is of rare occurrence. In diphtheria, morbid changes in the condition of the blood are the rule. Thus, it assumes a brown or black hue, even in those cases in which asphyxic phenomena have been little marked or entirely absent. This "sepia-like" blood is found in arteries as well as in veins. It stains the fingers and the tissues with which it happens to come in contact. Its consistency may, according to the case, be diminished or increased. As regards those clots which are found in the heart and in the blood-vessels of patients who die of diphtheria, M. Sauné inclines to consider them as being the consequence of the death-agony, and not the cause of death. Leucocytosis and hypinosis are not uncommon results of diphtheria. In fact, the formation of false membranes in diphtheria, far from being a sign of hyperinosis, is the manifestation of morbid changes in the condition of the blood, the plasma of which becomes decomposed, and the fibrin and albumen escape and form neoplasm. Diphtheria, therefore should, in this respect, be assimilated to those states which, like typhoid and other infectious fevers, the puerperal state, viruses, etc., develop hypinosis. Albuminuria is not unfrequently met with in diphtheritic cases. According to MM. Lécorché and Lancereaux, superficial parenchymatous nephritis is the most common renal complication of diphtheria. Other forms of renal disease, such as steatosis and amyloid degeneration, are sometimes also observed. A most noteworthy peculiarity is the asymmetry of the renal lesion. Thus, whilst in scarlatinous albuminuria both kidneys are pretty equally affected; in diphtheritic albuminuria, they are very unequally so, so that, although one of these glands may be most deeply disorganised, the other, as a rule, suffices for the elimination of proteic products. The consequence of this is that œdema and cerebral symptoms, which are of so frequent occurrence in scarlatina, are relatively rare in diphtheria. The Germans describe diphtheria of the vesical mucous membrane, but their description applies to membranous cystitis, and has nothing to do with real diphtheria. Post partum diphtheritic membranes have been found lining the uterine cavity, especially the placental site. Again, diphtheritic products have been met with at the vulva, in the vagina, and in the female urethra. They also have been seen on the scrotum, the preputium and the glans, whence they extended to the urethral mucous membrane. The nerves which end in the paralysed muscles of diphtheritic patients contain healthy as well as diseased tubes; the latter present fatty granular degeneration. The sound tubes may possibly be the sensitive, and the degenerated the motor elements of the nerves. The paralysed muscles show fatty granular degeneration. The non-paralysed muscles sometimes are found fatty, and in one instance they had undergone waxy degeneration. The conjunctiva, especially in its palpebral portion, may become the seat of false membranes. At first, intense hyperæmia is observed, but ischæmia soon supervenes. Owing to insufficient nutrition, the cornea may ulcerate, suppurate, and even become perforated; hence, the escape of the aqueous humour. In exceptional cases, the whole of the eyeball was seen to suppurate away. Again, the presence of strabismus, amblyopy, midriasis, and blépharoptosis points to some lesion of the motor muscles of the eyeball, or of those connected with accommodation. Lastly, diphtheria may, through the Eustachian tube, extend from the pharynx to the tympanum, where it dislocates the ossicula auditus, perforates the membrana tympani, and invades the external auditory canal, the pinna, and that portion of neighbouring cutaneous surface which lies behind the pinna.

Whether diphtheria develop in the midst of apparently perfect health, or supervene on some other disease, its nature is the same; but since its course and gravity vary according to its origin, the distinction between primary and secondary diphtheria is to be maintained.

Primary Diphtheria.—Diphtheria is a general infectious and contagious affection, the local manifestations of which have their seat on the mucous membranes and the skin, and are to a variable degree accompanied with general symptoms, the marks of the septic nature of the disease. According to the proportion of the local to the general phenomena, three forms of diphtheria are to be considered. (*a.*) Benignant Diphtheria.—In this variety the constitutional symptoms remain latent, the local manifestation, which generally has its site in the fauces, shows little tendency to spread, and, at all events, does not invade distant parts. If the false membrane extends from the pharynx to the larynx, life may be endangered, it is true, but in this case to obviate asphyxia suffices to remove all jeopardy. Adenopathy is never much developed, and may be altogether absent. Albuminuria is neither common nor very rare. The duration of the disease seldom exceeds a week, but paralysis of the velum palati or of other organs may very possibly follow. (*b.*) Infectious Diphtheria. —Here, the plastic formation shows a great tendency to extensive development, both in situ and at a distance. Here, also, suppuration and gangrene of the affected parts are often observed. So is adenopathy, which is considerable, and may amount to suppuration of the ganglia and of the surrounding connective tissue. Fever is of usual occurrence, and various hæmorrhages and consequent anæmia and leucocytosis have been observed. Albuminuria is frequently present, but cerebral symptoms and mental disturbance are very little marked. Convulsions, however, may be met with in children. The prognosis of infectious diphtheria is very serious. Death takes place either from exhaustion alone or from exhaustion and asphyxia combined. Secondary paralysis seldom fails to follow. This is the form of diphtheria that has the longest duration. (*c.*) Malignant Diphtheria.—This variety is characterised by the intensity of the septic phenomena. Thus, some patients are carried off within twenty four hours and before the pseudo-membrane is fully formed. Others are the subjects of most rapid and extensive development of the neoplasm. In all the cases, however, the general disturbance is the main feature. Whether the false membrane be much or not at all developed, cervical and parotidean adenopathy and the swelling of the connective tissue are most intense. This tumefaction of the cervical region is characteristic, being, according to Mercado's expression, "pestiferi morbi naturam redolens." Owing to the slight development of the false membrane in some cases, malignant diphtheria is an insidious affection; its prognosis is invariably fatal. Indeed, when the disease lasts as long as a week, the false membranes may possibly disappear, and their seat may heal. Again, fever may never much develop; but albuminuria is usually present, and extreme prostration, cachectic facies, and enormous cervical enlargement point to imminent danger.

General Symptoms.—Diphtheria is not a very pyrogenic affection. At the onset of the disease a sharp brush of fever is not an unfavourable symptom. If, however, the febrile state persists, its duration will exhaust the patient's strength, and thus much increase the danger. At any period other than the onset, the appearance of fever indicates the presence of some unfavourable complication. With these exceptions, the thermometer is here but of little prognostic value. As a rule, the temperature and the pulse, at first, run more or less above the normal, and they may sink below the normal as soon as malignant symptoms develop. But they also may very possibly either never be found above the normal or remain high to the last. In fatal cases, although the temperature and the pulse may have fallen below par, the respiration becomes more and more accelerated until death. Its acceleration, whenever no thoracic complication is present, must be considered an unfavourable symptom. In the majority of cases there is albuminuria; but its duration, as a rule, does not exceed a very few days. However, in seventy cases of recovery observed by M. Sauné, albumen could be traced in the urine as late as the fifty-seventh day of disease. Those instances recorded by Gregory and Reyer, in which diphtheria generated chronic albuminuria, should be regarded as exceptional. Out of 224 cases of diphtheritic albuminuria, M. Sauné met with œdema only seven times; viz., with anasarca, once; with œdema glottidis, once; with meningean and ventricular œdema, once; and with œdema of the face in the four other instances. The rule is that dropsy and albuminuria declare themselves simultaneously. In one case, however, dropsy preceded albuminuria by eighteen days. Since, in the absence of all dyspnœa, as happens in the case of localized cutaneous diphtheria, albuminuria has been observed, this phenomenon should not, as MM. Empis, Bouchut, Germe, and Hervieux think, be exclusively attributed to croupal asphyxia, which plays only an accessory part in its production. M. Gubler believes that, in diphtheria, the presence of albumen in the urine depends upon hyperalbuminosis of the blood. But experiments have proved that hyperalbuminosis of the blood cannot of itself produce albuminuria. Moreover, M. Sauné does not think that this condition of the blood is present in diphtheria. As suggested by Lorain and Charcot, and established by M. Lécorché, diphtheritic albuminuria is caused by renal congestion and morbid degeneration of the tubular epithelium. The presence of albuminuria indicates the diphtheritic nature of the case; but its absence is of no diagnostic value whatever. As regards the prognosis, it should be mentioned that, out of 233 cases of albuminuric diphtheria, M. Sauné has observed ninety-one recoveries; and out of 160 instances of non-albuminuric diphtheria, ninety-seven recoveries. In his opinion, albuminuria in diphtheria is a mere epiphenomenon, the presence of which, in most cases, is of very little prognostic significance. In testing for albumen, it should be ascertained that the patient has not been submitted to balsamic treatment. For copaiva resin is eliminated by the kidney and is suspended in the urine, from which, on the addition of hydric nitrate, it precipitates, forming a cloud very similar to albumen. In order to avoid all error, the cloud obtained in the urine should be treated by alcohol, which dissolves the resin and does not modify the albumen. Again, under the microscope, whilst resins present a crystalline form, an albuminous coagulum assumes a granulo-lamellar appearance.

In the year 1858 M. G. Sée described a diphtheritic scarlatiniform rash. If we discard those instances in which some eruptive fever either co-exists with or has been mistaken for diphtheria, and also all the cases of copaivic eruption, we shall find that diphtheritic rash is by no means of frequent occurrence. In fifty cases of this kind, the only ones which M. Sauné has met with, all febrile exacerbation, vomiting, anorexia, pruritus and tumefaction were absent; and in none of these cases did the duration of the rash exceed two days. The eruption makes its appearance during the first week of the disease. In the greater number of cases the rash is scarlatiniform; in others it is morbilliform; sometimes it assumes an erythematous appearance, and then it is either generalised or limited to the trunk or to the limbs; sometimes it resembles urticaria, echthyma, etc.; or it is vesicular. The presence of any of these rashes does not appear to modify the evolution of diphtheria, or to have any prognostic significance. Contrary to P. Wilson's and Eisenmann's opinion, gastro-enteric disturbance is uncommon in diphtheria. Diarrhœa and vomiting, however, are not unfrequently present in consequence of emetic treatment. According to Ormerod, the supervention of vomiting during convalescence is a very unfavourable sign. Although the diphtheritic process can by no means be assimilated to that of gangrene, the former, by producing debility, predisposes to the latter. The tonsils, the uvula, the pharynx, the velum palati, the lips, the trachea, the larynx, the lung, the skin, and the wound resulting from tracheotomy are the parts most frequently affected with gangrene consecutive to diphtheria. Whenever some local cause, such as pressure from the canula, accounts for the production of sphacelus, this accident is not so unfavourable an omen as it is when gangrene spontaneously develops. Here, as in every infectious disease, the tendency to hæmorrhage is most marked, and this complication, from whatever part of the body the blood flows, is always extremely serious. Hæmorrhage either occurs as a prodromon or supervenes during the second week of the disease, when the false membranes become detached. The danger is not in proportion to the abundance of hæmorrhage, but the presence of hæmorrhage is a sign of the malignancy of the case. Out of twenty-five cases of early epistaxis, death took place twenty times; out of eleven instances of late epistaxis, eight ended fatally. Out of fifteen patients who had hæmorrhage from the fauces and mouth, fourteen died. Out of seven examples of early hæmorrhage from the tracheal incision, death resulted in five; and in five also out of seven cases of late hæmorrhage from the tracheal wound, fatal termination was observed. Subcutaneous hæmorrhage and purpura are not less unfavourable signs than the preceding forms; and whenever the false membranes became infiltrated with sanguineous exudation, the patient died. Lastly, in the case of a boy aged 4 years, in whom, from the twelfth day of disease, blood had been continuously oozing from the fauces, the nose and the lips; on the sixteenth day hæmorrhage suddenly became so profuse that death resulted in the course of a few instants. In addition to œdema connected with albuminuria, the presence of either anasarca or of œdema of the feet or face may, in the absence of all albuminuria, complicate diphtheria. This is a late complication which appears at the end of the third week of the disease, and which, as a prognostic sign, is of little import. Its pathogeny may possibly be connected with some vaso-motor paralysis. Out of 149 cases of diphtheria, M. Sauné did not meet with one instance of endocarditis. He attributes to myocarditis and cardiac paralysis those cases which are occasionally observed to end fatally in the midst of convalescence, and in which the supervention of death has been ascribed to cardiac thrombosis. The convulsions which supervene at the onset of diphtheria in children do not present any peculiarity. Those, on the contrary, which take place in an advanced stage, are generally precursors of death. Out of 1,382 cases of diphtheria, M. Sauné finds paralytic phenomena to have been present in 155. Diphtheritic paralysis generally develops within one month from the time of recovery. Its supervention may possibly be unaccompanied with any general symptom; more commonly, however, it is preceded by an exacerbation of fever and of albuminuria; so that whenever, during convalescence, the temperature rises suddenly, paralysis is to be expected. When paralytic phenomena appear at an early period, they very often rapidly subside in the course of a few days; but, after a variable lapse of time, they recur in some other muscles. When, on the contrary, they supervene at a late period, paralysis successively, and without any intermission, develops in all those organs which are to be affected. Its seat is most variable: the pharynx, the tongue, the lips, the cheeks, the upper and the lower limbs, the cervical, facial, thoracic, intercostal and abdominal muscles, the diaphragm, the intestine, the sphincter ani, the bladder, its sphincter, one, several, or all of them, may be implicated in the same patient. The heart itself may become paralysed, either primarily or secondarily to other organs. But the favourite seat of diphtheritic paralysis is the upper part of the larynx, in which it may remain localised, or from which it may subsequently extend to the velum palati. Diphtheritic paralysis is usually symmetrical. Some instances of facial hemiplegia, however, have been recorded; and M. Sauné has met with an instance of right hemiplegia of the body. But, in these hemiplegic cases, the apparently sound side was, though in a less degree than the other, more or less paralysed. Choreiform phenomena also have been observed. According to Brenner, co-ordinating motor disturbance may be due — (*a.*) To true ataxy, probably produced by the lesion of some co-ordinating motor centre; (*b.*) To ataxic paralysis, the result of paresis of some groups of muscles of the limbs co-existent with more marked paralysis of others; (*c.*) To true paralysis unequally developed in the different muscular groups. In diphtheritic paralysis, faradic contractility is diminished and galvanic contractility is markedly increased. Anæsthesia, either general or local, is not uncommonly observed and is sometimes accompanied with analgesia. The order of frequency in which the different organs become the seat of diphtheritic paralysis, ataxy or anæsthesia is as follows—the fauces, the lower limbs, the upper limbs, the trunk, the neck, the rectum, the bladder, the sensory organs. Recovery takes place successively in the lower limbs, the fauces, the upper limbs, the trunk, the viscera, the eye. Sometimes, however, the disturbance assumes a most erratic and irregular form. In exceptional cases, hyperæsthesia was observed. Visual disturbance, such as temporary blindness, amblyopia, diplopia, presbytia, more seldom myopia, may supervene either from muscular paralysis, or from neuritis or neuro-retinitis. Strabismus and ptosis should also be mentioned. Again, the speech may be affected; but no bulbar lesion was ever detected. The auditory, olfactory and gustatory senses are less often implicated than the optic apparatus. Lastly, in male patients, anaphrodisia has been observed. The intelligence usually remains entire. Recovery is the rule, but death, sometimes, results from inanition, from cachexia, from paralysis of the respiratory muscles, or from the supervention of some thoracic complication. Sudden death also is to be feared. This may result from syncope, the consequence of cardiac paralysis supervening in the midst of convalescence. In the case of laryngeal paralysis, sudden death may be determined either by the penetration of aliments into the larynx, or by asphyxia from functional deficiency of the inspiratory laryngeal muscles.

Secondary Diphtheria may develop in the course of various diseases, such as typhoid fever, tuberculosis, pneumonia, pleurisy, variola, urticaria, cholera, purulent ophthalmia, and of various cachexiæ, such as scrofula, rachitis, chronic diarrhœa; but it is in the case of specific fevers, like morbilli scarlatina and pertussis, that its supervention is the most frequent. The prognosis of diphtheria secondary to tuberculosis or to typhoid fever seems to be invariably fatal. Diphtheria, complicating scarlatina or pertussis, does not appear to be quite so dangerous as when it is connected with morbilli.

In the following pages M. Sauné describes in succession the different forms of localised diphtheria, viz., that connected with angina, croup, bronchitis, coryza, conjunctivitis, otitis, stomatitis, and anal, genital and cutaneous diphtheria. As regards the process of the disease, M. Sauné, contrary to M. Bretonneau's theory, believes that diphtheria, like all other infectious diseases, poisons the whole of the organism, *ab initio*, and that the local false membranes, as well as the most varied visceral lesions, are mere results of the general intoxication. In other words, the neoplasm stands in the same ratio to diphtheria as hard chancre to syphilis, viz., it is the effect, not the cause of the illness. Diphtheria is liable to recur either in the same or in some other part of the body. It appears to lose something of its gravity by recurring; since, in one case of second recurrence, and in twenty-two out of twenty-nine instances of first recurrence, recovery took place. In a certain number of cases, the diagnosis of diphtheria cannot be made in an early stage, and the evolution of the disease is our only diagnostic means. Herpes labialis, for instance, may very possibly coexist with diphtheria; no glandular enlargement may be present; and the case may be so mild that the diagnosis is utterly impossible. Under these circumstances the patient should be treated as though the case were obviously diphtheritic. Contrarily to Billroth's assertion, cutaneous diphtheria and hospital gangrene should be regarded as two essentially different diseases. Diphtheria generally assumes the epidemic form. Although epidemics of this disease have been observed during the summer months and in hot and dry weather, the most severe epidemics on record occurred during the winter time, and the presence of cold and dampness seems favourable to the spread and to the intensity of this affection. Contagion is the only mode of its development admitted by M. Sauné. Contagion may take place in three different ways:—(*a.*) Transmission by direct contact. This means of propagation of diphtheria is not yet well demonstrated. (*b.*) Transmission by inoculation. The inoculability of diphtheritic false membranes or liquids appears to be a well established fact. Their inoculation, however, is not very easy. The inoculation of diphtheritic blood very certainly produces septicæmic phenomena, but it is doubtful whether it can generate diphtheria. (*c.*) Transmission through the medium of the atmosphere. This is the chief means of propagating diphtheria. In this case the mechanism may consist in:—(1.) The inhalation of infected air. This, which is by far the commonest occurrence, explains why the pharynx and the nasal cavity are the favourite seats of the neoplasm. (2.) Absorption at the surface of mucous membranes other than those of the respiratory tract. (3.) Absorption at the surface of wounds. The greater frequency of diphtheria in young children should not be referred to the greater plasticity of their blood, but to the greater liability of their mucous membranes to become inflamed, and also, perhaps, to absorb miasms. Out of 1,575 cases, M. Sauné found 813 male and 762 female patients. Both sexes, therefore seem to be equally predisposed to contract diphtheria.

Treatment.—Tonic treatment and nutritious diet, cinchona, quinia, iron, ice sucking; and, in hæmorrhagic cases, cold applications are most decidedly indicated. Stimulants such as coffee and small doses of alcoholic preparations should be prescribed. Antiphlogistic medication and alterative remedies are to be discarded. So, in most cases, are those medicaments which, like balsams and emetics, produce digestive disturbance. The occasional use of ipecacuanha, however, should not be absolutely rejected. But we ought constantly to bear in mind that there is no specific treatment of diphtheria, and that there are no means of preventing the formation of the pseudo-membranes. Since these are the result, not the cause, of the constitutional infection, their destruction is only indicated when their bulk constitutes a mechanical obstacle to respiration or deglutition. Not only is cauterisation powerless, but its use is attended with great risk; and the same remark applies to amygdalotomy and to the use of the laryngeal probe. Astringent applications are devoid of all danger, it is true, but they cause irritation of the fauces, and thus interfere with alimentation. Solvent applications also have been tried; the gargles which best dissolve the false membranes are made with hydric lactate, or, better still, with calcic hydrate; but glycerine has no action whatever upon diphtheritic products. Antiseptic applications are very useful in modifying the septic matter which is incessantly generated and being absorbed, causes septicæmia. Tracheotomy is rarely successful in children under two years of age. Nevertheless, some cures in children much under this age have followed this operation, which, therefore, should be tried, however young the infant. In the adult, tracheotomy is very seldom efficient, because, owing to the large dimensions of an adult's trachea the development of asphyxic phenomena, in this case, is a sign that the membranous formation has invaded the bronchi. Considering that, in cases of croup, it is very difficult to diagnose with certainty the presence of pseudo-membranous bronchitis, of broncho-pneumonia, or of pneumonia, these complications do not contraindicate the operation. Again, however unfavourable is the prognosis of secondary croup, we should remember that there are on record instances of successful tracheotomy in patients affected with pertussis, scarlatina, morbilli, or tubercle. Therefore, whatever may be the nature of the case, whenever death by asphyxia is imminent, tracheotomy should be performed, even in extremis. M. Sauné prefers operating at the upper region of the trachea to opening its lower portion or incising the cricoid cartilage. In performing tracheotomy, the use of the cautery is abandoned. Again, the use of a cravat after tracheotomy, should be substituted for that of moist and therapeutic inhalations, which are powerless to obviate the supervention of broncho-pneumonia. Of the accidents connected with tracheotomy, some, such as hæmorrhage, subcutaneous emphysema, and obstruction of the canula by pseudo-membranes, may either take place at the moment of the operation, or follow it after a variable delay. Others, such as mediastinal abscess, phlegmon, erysipelas, gangrene, diphtheria, premature cicatrisation, or unhealthy cicatrix of the tracheal wound, are amongst its commonest sequels. So are tracheal ulceration, stricture, polypi and fistula, general convulsions and pulmonary complications. The pulmonary complications, however, especially when the cravat is used, should be regarded as sequences of diphtheria itself rather than of tracheotomy. In order to obviate local irritation, Bartels, of Berlin, recommends the abrupt and final removal of the canula between the fifth and eighth day from the operation. This precept is unjustifiable. On the contrary, the removal of the canula should be effected gradually, and the circumstances of each case are the only guides as to the time when the instrument can be safely removed. Its removal, in fact, may be delayed by various circumstances, such as the prolongation of the diphtheritic intoxication, pulmonary complications, traumatic lesions, diphtheritic paralysis, general spasmodic state, or nervousness of the patient.

In a last chapter, which refers to prophylaxis, M. Sauné insists upon the fact that neither preventive nor curative specifics of diphtheria exist. Its inoculation is neither preservative nor curative; and not only is this treatment dangerous, inasmuch as it can produce fatal infection, but, in addition, it is perfectly useless, because diphtheria is liable to recur. The only prophylactic measures to be relied upon consist in the strictest isolation of the patients, and in their absolute sequestration in retired places.

SURGERY.

Hæmothorax (by E. Follin and S. Duplay.)—Whenever the blood is still flowing, and whatever may be the profuseness of the hæmorrhage, the wound is to be plugged and the evacuation of the pleuritic contents should be postponed as long as posssible. Of course, if the bleeding vessel were within reach, it should be secured by ligature. Whenever this cannot be done, the last resource is that the hæmorrhage may be stopped by pressure from the pleuritic effusion. The presence of this threatens asphyxia, it is true; but, whilst early evacuation might very possibly keep up hæmorrhage, and thus cause fatal anæmia, asphyxia, in the case of imminent danger, can always be obviated by timely tapping or incising. The co-existence of pneumothorax with hæmothorax does not require these precepts to be modified. Whenever the blood comes from the lung, the presence of air, by helping the effusion to compress this organ, favours the suppression of hæmorrhage. Indeed, Chassaignac suggested that, in the case of a pulmonary wound, hæmorrhage should be combated by forcing air into the pleural cavity. In the case of abundant and recent hæmothorax, the certainty that hæmorrhage is stopped is not an indication for removing the effusion. In fact, this evacuation, in addition to being very difficult on account of the coagulated state of the blood, might cause hæmorrhage to recur. The only exception to this rule is found in those cases in which the wounded vessel has been secured by ligature. In this occurrence the pleuritic contents are to be removed without delay, lest they undergo decomposition and irritate the pleura. Whenever, the wound having been plugged, asphyxia imminently threatens life, partial evacuation by tapping should be looked upon with great diffidence. In fact, the coagulated state of the blood rarely admits of any efficacious means short of pleurotomy. In cases of hæmothorax uncomplicated with pneumothorax, whenever hæmorrhage is definitively arrested, the only thing left to be done is to be ready to combat at their very onset all inflammatory symptoms which may supervene. Notwithstanding the development of pleurisy, all debilitating measures, like blood-letting, purgatives, low diet, etc., are to be avoided. If abundant effusion gives rise to dangerous dyspnœa, thoracentesis should be performed in such a manner that no air is admitted into the pleural cavity. Owing to the circumstance that the blood coagulum becomes broken up by the inflammatory effusion, tapping in nearly every case suffices to remove the effusion. Sometimes, however, this operation requires to be repeated within the course of a few days. In cases of hæmopneumothorax the supervention of pleurisy is unavoidable; and, as in the preceding case, the presence either of asphyxic phenomena from the rapid increase of the effusion, or of septicæmic symptoms from its decomposition on exposure to the air, or of both these circumstances, call for the removal of the pleuritic contents. In order to perform this, whenever the thoracic wound lies at the lower part of the chest, so that the effusion can easily escape through it, the plug should be removed and the wound should be sufficiently enlarged, either with the knife or by dilatation. Whenever the seat of traumatism lies too high to allow the free escape of the effusion, pleurotomy should be performed in some of the lower costal interspaces.—("Traité Elém. de Pathol. Ext.," vol. V. 1877, p. 477, *et seq.*)

Intrathoracic Tension (by J. J. Peyrot).—I. Until putrefaction produces post mortem pneumothorax, there is, after death, as well as during life, incessant antagonism between atmospheric pressure and pulmonary elasticity. Thus, whilst the former, by opposing the separation of the two pleural sheaths from each other, maintains the lung in a constant state of forced distension, the latter, like a centripetal force, is continuously acting upon each point of the thoracic parietes. This suction power of the lung varies with the volume, *i.e.*, the degree of forced distension, of the organ. Thus, whilst it is *nil* in the case of pneumothorax, accompanied with complete collapse of the lung, in the healthy condition it has its minimum at the end of expiration, and reaches its maximum when, at the end of inspiration, the chest is fully expanded. In a word, the more dilated the lung, the greater is its suction power. An illustration of this is given by that depression of the intercostal and of the supra-clavicular spaces which can be seen during a deep inspiration. Not only is this phenomenon due to atmospheric pressure which is greater, though very little so, than intrapulmonary tension, but it also, and chiefly, depends upon pulmonary elasticity. In fact, if, at the end of deep inspiration, the thorax be maintained in a state of full expansion, the depression of the soft parts, although the tendency to intrapleural vacuum can no longer be urged, will persist. Again, this centripetal force accounts for the persistency of the arch of the diaphragm, even after the abdominal viscera have been removed by post mortem examination. Lastly, the suction power of the lung, by acting upon both sides of the mediastinum, produces in the contents of this region an incessant tendency to dilate, as though they lay in a rarefied atmosphere. Thus, whilst the tension within the right auricle at the moment of its systole hardly reaches two millimetres and a-half, the tension almost always is negative in the superior vena cava. Again, contrarily to Barry and Berard's opinion, the venous blood, during both expiration and inspiration, flows towards the heart through the superior cava and through that portion of the inferior vena cava which lies below the opening of the suprahepatic veins. Since, during normal respiration, the pulmonary elasticity is never exhausted, the thoracic aspiration, though less marked during expiration, is never interrupted.

II. The presence of pleural effusion, by reducing the volume of the lung, tends to relieve the pulmonary elasticity, *i.e.*, to diminish the suction power of the lung. In fact, were the quantity of effused liquid such as merely to fill up the pleural space which the retracted lung would leave behind it, on opening the chest the intrathoracic tension would be exactly equal to atmospheric pressure.

But as the effusion, in most cases, is so abundant as to expand the chest-walls, these, being more or less elastic, react on the intrapleural contents, and thus cause the pressure to be increased. In most cases of pneumothorax and in those of abundant liquid pleuritic effusion, the bulging of the costal interspaces is a circumstance in favour of this view. In these cases if, either before or after death, tapping be performed, either gases or liquid, as the case may be, will escape; the former with a noise, the latter with a gush, thus indicating the intrapleural tension to be somewhat superior to atmospheric pressure. Even in the case of very scanty effusion, as soon as an opening is made the liquid escapes. The admission of air into the pleural cavity, therefore, is only possible after the excess of intrathoracic tension has been removed towards the end of the operation. In two cases of double pleurisy, MM. Rosapelly and Mocquot confirmed these assertions. After fixing to the trachea a tube which communicated with a water manometer, these experimenters successively opened both pleural cavities. It is a well known fact that, in a healthy chest, an experiment of this kind would cause the manometric liquid to flow back towards the open air, thus showing the measure of the pulmonary elasticity to be of several centimetres. In MM. Rosapelly and Mocquot's experiments, on the contrary, the manometer water was sucked towards the thorax while the pleuritic effusion was escaping; so that, in one instance, it rose four, and, in the other case, ten centimetres. M. Peyrot, in his investigations, used the following apparatus:—the main branch of a T tube was adapted to the trocar of Potain's aspirator; one of the other branches led to a recipient in which air was rarefied; and the other branch communicated with a water or a mercury manometer. Each of the latter branches could be closed by a cock. The manometer, therefore, could be completely isolated from the aspirator. On opening the pleura the intrathoracic tension was immediately noted before any suction was made. During the course of the operation, by shutting the cock, this tension was taken at different times. M. Peyrot in this way operated upon a man affected with pyopneumothorax, from the bursting into the pleural cavity of a hydatid cyst of the liver. This patient was in a very severe state of asphyxia. On introducing the trocar, the intrapleural tension was found to be equal to three centimetres of mercury. The respiratory movements at first did not produce well marked oscillations of the mercurial column. But, consecutively to the issue of about three pints of liquid, the tension subsided, and was then reduced to twelve millimetres. At the same time the oscillations due to respiration became much more decided. At that moment the operation was suspended.

III. It is interesting to mention that, whilst one side of the chest appears to be bulging and distended by abundant effusion, men suration gives very little difference between the diseased and the healthy side. This is easily accounted for by the displacement of the sternum, which is drawn towards the diseased side, and by the consequent production of a kind of obliquely-ovate thorax, with flattening of the sound side. In cases of abundant pleuritic effusion, the posterior mediastinum is displaced towards the healthy side, and the effusion encroaches across the spine upon the opposite half of the thorax. The aorta is not easily displaced, but it is compressed by the effusion. Not only is the œsophagus much displaced, but it is sometimes compressed; this circumstance accounts for the presence of dysphagia in one case of abundant effusion recorded by Damoiseau. If the effusion is abundant, and especially if it is double, inspiration will no longer dilate the chest enough to produce that tendency to vacuum which is required for the aspiration of a fresh supply of air, and a new respiratory type, *i.e.*, "respiration par refoulement," will then be assumed. This consists in active expiration which becomes the main agent of respiration; as much air as possible is expelled by energetic sighing expiration, so as to make room for new air which is then introduced by weak inspiration. Birds and other animals present a mode of respiration very similar to this suspirating type. At the same time the organs contained in the mediastinum are no longer in a quasi rarefied atmosphere; they may even become compressed. Hence, obstacle to venous circulation and consequent symptoms of asphyxia, such as cyanozed lips and fingers; cold extremities; frequent, small and even imperceptible pulse; turgid face; anasarca; formation of clots in the cardiac cavities, or in the large mediastinal vessels, etc. The absence of albuminuria is diagnostic between this kind of anasarca and cachetic anasarca. In fact, if the excess of intrathoracic tension is removed by pleurocentesis, or better by pleurotomy, the œdema will rapidly subside, and, in the course of a very few days, although no change in diuresis be noticed, it will disappear.

IV. On removing the effusion by tapping, too rapid expansion of the lung may, in some cases, give rise to intense pain and even to fatal phenomena, such as acute pulmonary œdema. Again, whenever the case is an old standing one, in which the lung is bound down by false membranes or is much altered in its structure, it not only cannot expand so as to fill up the vacuum produced by tapping, but, even in the absence of all atmospheric contact, the production of vacuum may very possibly cause the effusion to ferment or to putrefy, and thus to evolve noxious gases. Phenomena of this kind are observed after tapping purulent or sanguineous collections, and especially ovarian cysts. There is no doubt that, in the absence of all bronchial or parietal fistula, tapping can develop pneumothorax. Pleurotomy obviates all these inconveniences, and in proportion as the liquid escapes through the incision, relief is afforded. As regards pleurotomy, the danger of the operation consists in those septic accidents which subsequent suppuration from exposure to the air is liable to develop. At all events, there should not be the least objection to at once removing the whole of the liquid. In fact, the production of surgical pneumothorax by no means exposes the lung to greater compression than does the presence of the pleuritic effusion. This is so far from being the case that, not only is the pressure on the pleural surface of the lung diminished by pleurotomy, but, whereas atmospheric pressure is acting equally both on the pleura and on the bronchial surface of the lung, this organ is no longer acted upon by any force other than its own elasticity. One proof of this is that pleurotomy rapidly relieves the dyspnœa, and never produces acute pulmonary œdema. Moreover, subsequently to this operation and as the consequence of the removal of the pressure upon the mediastinum, the pulse, though it remains frequent for awhile, resumes its normal type; the cyanosis usually subsides within a few hours, and in the course of a few days the œdema disappears. Lastly, those temporary symptoms, such as syncope and respiratory disturbance, which sometimes, though rarely, develop while the liquid is escaping, are not due to the rapid escape of the effusion or to diminution of the intrathoracic tension; but they should be referred to that novel sensation which results from the admission of air into the pleural cavity.—("Archiv. Génér. de Méd. et de Chir.," July, 1876.)

Cerebral Anæmia after Tapping in cases of Empyœma.—M. Leudet, at the congress of Clermont, communicated the case of a patient who was operated upon for empyæma of the left side, and who, subsequently to the operation, had numbness and pain in the right hand from pleural irritation, due either to the rubbing of the canula or to therapeutic injections. In addition to these phenomena, temporary aphasia and bilateral optic disturbance were observed. M. Lépine's observations had shown previously that paralytic phenomena may develop on the diseased side. These are reflex symptoms. The pleura seems to be a source of irritation, a kind of epileptogenic zona, the irritation of which produces cerebral anæmia and consequent reflex phenomena, such as those above mentioned. These, by no means, are special to the pleura. By pinching the crural nerve in animals, Hitzig succeeded in provoking well-marked convulsions. M. Houzé de l'Aulnoit classes under the same head as the above symptoms, those neuralgic pains, which, after a pleural injection, caused one of his patients to groan for seven or eight hours together.—("Rev. Scientif.," No. 9, 1876.)

FORENSIC MEDICINE.

Post Mortem Appearances of the Blood found in the Heart (by E. Lancereaux).—(*a.*) The blood found in the cardiac cavities may still retain clots are pretty much like those formed in blood which has been extracted during life and allowed to cool. Thus they present two distinct portions, viz., one which lies in the depending part, and is dark and flabby; the other, superposed to this, which is firm, whitish, fibrinous, and, according to the case, more or less thick. These coagula are little, or not at all, moulded on the walls of the organ. They form masses which have no definite shape; they are localised in the heart, and they seldom extend into the adjacent vessels. Their resemblance to clots obtained by bloodletting seems to indicate that they begin to form at the moment of the death-agony, when the cardiac impulse begins to fail. Their condition is nearer that of normal blood than is that of dark fluid blood. Whenever they consist of such clots, the contents of the heart retain almost in toto the property which normal blood presents of reddening and coagulating. This state of the blood accompanies a great number of affections, most of which are characterised by the presence of some inflammatory process localised in one or more organs. (*d.*) Lastly, the blood may assume the appearance of fibrinous clots. These are solid, firm, and moulded on the cavities in which they are contained. The right side of the heart is distended, and when it is opened it shows white or yellowish, elastic, and malleable clots. These chiefly consist of concrete fibrin, presenting a fibrillous state and entangling a few blood corpuscles, and especially leucocytes. These clots are found both in the auricle and in the ventricle, from which they extend into the adjacent vessels. Within the ventricle they are flattened and they are entangled in the columnæ carneæ. Within the arteries they become cylindrical, and bear the impress of the sigmoid valves. In the auricle these coagula present transverse striæ, resulting from the impress of the columnæ carneæ. They are sometimes dark, and their depending portion is cruoric. The left ventricle is less liable than the right to contain concretions of this description. When it does contain any, they are not always entirely fibrinous; as a rule they are less firm than those in the right ventricle, and they, at times, are weltering in liquid blood. At the same time, the vascular trunks, and especially the sinuses of the dura mater contain cylindrical clots. These are tapered at their extremities, whitish, firm, and elastic, several centimetres long, and they have occasionally been mistaken for worms. Some authors doubt whether these concretions are formed before or after death. Their shape and histological composition, however, clearly show that they are formed during life. In fact, were they post mortem formations, they could not bear the impress of the valves, because these organs, then collapsed, are in apposition with the arterial wall. Again, on this hypothesis, they could not be absolutely free from blood corpuscles. In addition to these reasons in favour of their being ante mortem formations, another argument may be found in such symptoms as increasing dyspnœa, excessive anxiety, cyanosed and livid countenance, distended jugular veins, small and irregular pulse, cardiac intermittence, and sometimes fits of syncope, which are of common occurrence in subjects whose hearts are found post mortem to contain such concretions. These seem to be more especially connected with the presence, first of any acute disease, and secondly, of some local cardiac or pulmonary disturbance. It is particularly in those affections which have an infectious or a septic origin, that these concretions appear to be oftenest met with.—(" Traité d'Anat. Pathol.," Vol. I., 1875-77, p. 597, *et seq.*)

A means of Ascertaining that a New-born Child has not Breathed (by Gellé).—In the fœtus the middle ear is void of air and filled with a gelatiniform mass. Under the influence of respiration, the blood is brought to the new vascular area, *i.e.*, to the pulmonary circulation. The consequence of this is that the contents of the tympanum become absorbed, and that its reddish and thick mucous membrane becomes anæmic and thin. The aeration and respiration of the tympanum are favoured by the cries of the child and by its efforts at sucking. Three hours is the average time which is required for the full development of this phenomenon. If, however, the respiration is languid, and if either slow or rapid asphyxia is produced, the aeration of the tympana will be incomplete; it may be only unilateral; it may be absent altogether. Under these circumstances, notwithstanding the presence of a certain quantity of air, the tympana retain some remains of the fœtal state. Their condition varies with the longer or shorter time during which respiration has been effectuated. Thus, if they are filled with gelatiniform matter and devoid of air, this will be a proof that the child has not breathed. However, whilst the persistence of this substance points to death from asphyxia, no conclusion should be inferred from its absence. In fact, anæmia, the result of fatal hæmorrhage, can, as well as the establishment of respiration, cause its disappearance.—(" Gaz. Heb. de Méd. et de Chir.," No. 2, 1877.)

Subpleural Ecchymoses (by Girard).—A female corpse was found in a well, and, on seeing subpleural and pericranial ecchymoses, the medical men who performed the post mortem examination declared that, before being thrown into the water, the deceased had been suffocated. In consequence of this declaration, the woman's husband was tried before a jury. M. A. Tardieu, and most of the standard authors, admit that, in cases of death from submersion, subpleural ecchymoses are never found. Nevertheless, considering that the depth of the well was, in this case, thirty-three feet; its width from five to six feet, and the depth of the water in it seven feet and a-half; and, supposing that the woman had not been able to perform any inspirations at the surface of the water, M. Girard thought that she might have perished from suffocation in water, and that this circumstance could well account for the presence of the petechiæ which had been detected. In order to support this view he submerged four rabbits, the feet of which were fastened. Within the lapse of two minutes these animals died, and post mortem subpleural ecchymoses were found. In the presence of these results, the jury brought in a verdict of not guilty. From the above experiments the following conclusions flow:—It is not exact to say that, in the case of death from submersion, subpleural, subpericardial, or pericranial ecchymoses are never found. In fact, the mechanism of this kind of death is threefold:—(*a.*) First, death may take place from syncope, as happens when the animal is cold-struck. The forensic authorities admit the possibility of this mechanism; but they afford no decided proof of it. (*b.*) Secondly, death may result from rapid suffocation, as when the animal cannot reach the surface of the water. (*c.*) Lastly, death may arise from slow suffocation, as when the animal, before dying, has succeeded in performing a few inspirations at the surface. This is the usual mechanism in drowning cases. The differences observed between the lesions belonging to these two latter modes of death merely depend upon the inhalation of water alone when the animal has not been able to reach the surface; and of both water and air, in those cases in which it has floated and in which, during inspiration, some blood has penetrated into the pulmonary vessels.—("Journ. de Méd. de l'Isère," 1876.)

MATERIA MEDICA AND THERAPEUTICS.

Inhalation of Amylic Nitrite, and its Effects upon the Respiratory Products and upon the Blood (by Jolyet and Regnard).—Soon after the inhalation of amylic nitrite, the mucous membranes lose their pink tint and assume a slate-blue colour. If, then, an artery be uncovered, the arterial blood, instead of its usual bright red, will present a dark brown hue. In other words, the inhalation of amylic nitrite gives rise to well-marked symptoms of asphyxia. The following table shows the results of MM. Jolyet and Regnard's experiments on dogs:—

	Carbonic acid gas produced in one hour. Litres.	Oxygen absorbed in one hour. Litres.	Relation $\frac{CO_2}{O}$	Gases of the arterial blood.		Greatest volume of Oxygen absorbed by a hundred cubic centimetres of blood.
				Carbonic acid gas.	Oxygen.	
A. Normal dog weighing 30 lbs.	7·355	9·470	0·77	30·0	17·0	24·0
Ibid, after inhaling amylic nitrite......	5·440	6·131	0·88	22·4	8·4	12·0
B. Normal dog weighing 29 lbs.	5·416	7·815	0·69	29·0	16·0	25·0
Ibid, after inhaling amylic nitrite	3 360	3·520	0·98	21·0	5·3	6·0

Whilst the degree of anæsthesia to which the first dog was submitted, was that which is usually produced in human subjects, the dose given to the second dog was so large that, within a short time, death supervened. In these experiments the alteration of the blood accounts for the diminution of the combustion. In fact, if the arterial blood, which, as before said, has become dark, is stirred in air, it does not resume its normal brightness. Considering that the blood, under the influence of amylic nitrite, loses much of its absorbing power, it is a most important question whether a part of the hæmoglobin is destroyed or whether its action is partly impeded. Since animals, as well as men, rapidly recover, the second hypothesis is the true one. It can also be easily ascertained, as was done in the case of the first dog, that on the following day the normal capacity of the blood, as regards the absorption of oxygen, is fully restored. Moreover, the blood of the second dog, after having been preserved in a stoppered phial during twenty-four hours, was found to absorb for each hundred cubic centimetres, sixteen volumes of oxygen instead of six. On spectroscopical examination, the lines of oxygenated hæmoglobin, when given by the dark blood of an animal which has inhaled amylic nitrite, are very ill-defined. In addition to these, an absorption line can be seen in the red part of the spectrum, pretty nearly at the same place as the hæmatin line. On the day following that of the operation, and after the blood has regained its absorbing power, not only has the absorption line disappeared from the red part of the spectrum, but the two hæmoglobin lines have recovered their normal intensity. It is interesting to mention that the addition of bases or of alkaline carbonates reddens the blood which has previously been darkened by amylic nitrite. Such addition also causes the abnormal spectrum line to disappear, and the oxyhæmoglobin lines to resume their usual appearance. Again, the hæmoglobin obtained from the blood of guinea-pigs which have inhaled amylic nitrite has lost the property of crystallising. Lastly, in the presence of amylic nitrite, blood placed on mercury evolves in twenty-four hours more than twelve of nitrogen and two of carbonic gas for each hundred cubic centimetres, and only a trace of oxygen.—(" Gaz. Médic. de Paris," 1876.)

Hydrochlorate of Apomorphia.—The observation of forty cases leads M. David to the following conclusions :—(*a.*) The hydrochlorate of apomorphia, compared with other emetics, is one of the simple group. Its secondary effects are almost *nil.* It produces vomiting within a relatively short time; and it can be used hypodermically. (*b.*) Considering that, in some subjects, it develops a marked tendency to syncope and to collapse, this substance should not be administered without caution. (*c.*) Notwithstanding assertions to the contrary, its action upon the vomiting centre is direct, not reflex.

(*d.*) The sixteenth of a grain of apomorphia is a dose sufficient for a man. (*e.*) In the course of time, although it retains its active properties for a year, the watery solution of hydrochlorate of apomorphia becomes green. (*f.*) The thirty-third of a grain of morphia, in dogs, suffices to prevent the action of apomorphia. (*g.*) In these animals, the insensibility produced by chloroform delays the action of apomorphia until the moment of waking. (*h.*) The same effect is produced by anæsthesia obtained by intravenous injection of chloral hydrate. (*i.*) Consequently, in cases of anæsthesia by chloroform or by chloral hydrate, the use of apomorphia, as an antidote, is contra-indicated. (*j.*) In dogs, the dorsal decubitus but incompletely prevents the emetic effect of this drug. (*k.*) The mere section of the vagi is powerless against its action. But the section of these nerves, combined with their paralysis by atropia, diminishes it. (*l.*) Asphyxia from laryngeal obstruction does not interfere with the action of apomorphia. (*m.*) Given to dogs, this drug does not modify the biliary secretion. (*n.*) Those animals which do not possess the faculty of vomiting, are peculiarly excited by apomorphia. This special stimulation is a central action.—("Progrès Méd.," No. 40, 1876.)

Cicutin (by Dujardin-Beaumetz).—Cicutin can be extracted from every part of the conium maculatum, but it is chiefly prepared from the unripe fruit. Its formula is $C_8H_{15}N$, and it may be looked upon as ammonia in which two atoms of hydrogen have been replaced by that hydric carbide to which Wertheim, in the year 1864, gave the name of Conylene [C_8H_{14}]. If, in the formula of cicutin, the atom of hydrogen is replaced by some alcoholic radical, such as methyle, ethyle, etc., methylconicin [$C_9H_{17}N$], ethylconicin [$C_{10}H_{19}N$], etc., will be obtained. With acids, cicutin combines and forms salts. Its hydrobromate crystallises in rhomboid prisms, which are soluble in water, in alcohol, and in ether. This salt contains more than half its weight of pure cicutin, *i.e.*, 0·595 of pure cicutin, and 0·405 of hydric bromide in one part of salt. Although they paralyze the motor nerves, cicutin and its salts leave the muscular contractility entire. Cicutin, when perfectly pure, as it is in the form of hydrobromate, rarely produces convulsions. But, when the drug contains any methylconicin or ethylconicin, this accident is very commonly observed. Although they leave the muscular contractility entire, cicutin and its salts, as well as curara, paralyze the motor nerves. But in a dog curarized, and in which the pneumogastric and the sciatic nerves have previously been isolated, although the sciatic nerves are no longer acted upon by electric stimulation, the vagi are still influenced by this agent. The experiments of MM. Capours, Jolyet, and Pelissard have shown that, in a dog poisoned by cicutin, the vagi cease to answer to electrisation earlier than the sciatic nerves. As an illustration of the action of cicutin on sensibility, M. A. Gubler recorded the case of a woman who, after rubbing a growth with cicutin ointment, presented anæsthesia of the fingers used for this operation. Its action on the circulation is not so powerful as it is on sensibility. According to MM. Casaubon, Pelvet, and Martin-Damourette, arterial tension is abated and the function of the hæmatin is disturbed by cicutin. Three-quarters of a grain of hydro-bromate of cicutin given per mouth to a dog weighing about seventeen pounds, produce somnolence. One grain and a-half paralyse the posterior limbs. If the dose is six grains, the paralysis will be general; but, after an average duration of four hours, it will disappear. If seven grains and a-half are given in one dose, the case will end fatally. With regard to the phenomena presented by human subjects who took cicutin, it is interesting to relate M. Saison's experiments on himself. At eleven o'clock p.m., he took two grains and a-quarter of hydrobromate of cicutin, that is, three-quarters of a grain of pure bromine and one grain and one-fifth of pure cicutin. No appreciable effect resulted during the following hour; after which, M. Saison, who was then affected with bronchitis, slept all the night quietly and without any cough. On waking, nothing abnormal was felt, and at seven o'clock a.m., *i.e.*, eight hours after the ingestion of the first dose, a second dose of two grains and a-quarter was taken. This, at nine o'clock a.m., gave rise to the following phenomena, viz., tendency to giddiness; unfitness for intellectual work; cerebral anæmia; and, after a few hours, incipient titubation. These phenomena reached their climax at noon; at three o'clock p.m., they had all disappeared. M. Landure, during the lapse of twelve hours, injected two grains and a quarter to a two months' old infant, and no poisoning symptom was observed. M. Dujardin-Beaumetz believes that hemlock should be especially employed in treating those reflex actions, such as paroxysmal cough, asthma, hooping-cough, hiccup, dysphagia, vomiting, etc., the cause of which lies in the pneumo-gastric nerves. In these cases, the association of hydrobromate of cicutin with potassic bromide proves beneficial. Considering that, in rats, some experimenters have observed marked antagonism between strychnia and cicutin, the latter suggests itself as a remedy to be tried against tetanus and chorea. A noteworthy fact is that the experiments performed on animals show that this drug, whenever it is endermically administered, acts with much increased intensity. Thus, in cats, whilst three grains per mouth caused a state of paralysis which subsided within four hours; one grain and a-half subcutaneously injected developed symptoms which persisted for longer than sixteen hours. Since the action of hemlock is but of little duration, it is advisable frequently to repeat the dose. In M. Delioux's opinion, one should not start with more than one-sixth of a grain per mouth, or one-sixtieth of a grain hypodermically; and no subcutaneous injection should contain more than one-sixth of a grain of hydrobromate, *i. e.*, one-eleventh of a grain of pure cicutin.—("Bullet. Génér. de Thérap.," July 15th, 1876.)

Double Cyanide of Potassium and Zinc (by E. Lelu and G. Lugan).—M. Luton, in 1875, called attention to the efficiency of cyanides in the treatment of rheumatic arthritis. MM. Lelu and Lugan's investigations on this question of therapeutics have thrown light upon the following points, viz.:—(*a.*) Owing to its rapid decomposition, the use of hydric cyanide should be altogether abandoned. (*b.*) Potassic cyanide does not decompose so rapidly as the preceding. Nevertheless, although this salt is odourless in vacuo, in the atmosphere it evolves hydrocyanic vapours, which is a proof of its decomposition. (*c.*) Zincic cyanide keeps well, it is true; but its insolubility renders its use objectionable. It requires, in order to be dissolved, a degree of acidity which the gastric juice is far from presenting in every case; hence the numerous failures of this drug in the treatment of rheumatic fever. (*d.*) The best preparation is the double cyanide of potassium and zinc; this salt keeps well on exposure to the atmosphere; it presents a fair degree of solubility; its chemical composition is constant; and the weakest acids readily set its hydric cyanide at liberty. In prescribing the double cyanide of potassium and zinc, care should be taken to avoid the simultaneous use of aqua laurocerasi, which, instead of increasing, weakens its action. In fact, in the presence of cyanides, two molecules of benzoic aldehyde from aqua laurocerasi will combine and precipitate a yellowish deposit of benzoin [$C_{28}H_{12}O_4$.]

Mode of Preparation.—Precipitate ammonic hydrocyanide by means of zincic sulphate, free from iron. Throw the precipitate on unfolded filtering paper, and wash it with boiling water. Then collect the precipitate and dissolve it in a solution of potassic cyanide. On evaporation, the double salt crystallises in transparent and anhydric octahedra. Collect these, wash them with a little distilled water, and carefully dry them between sheets of blotting paper. You thus obtain a cyanide endowed with a sweetish taste, free from all hydrocyanic odour, very soluble in cold water, of a very constant composition, and readily evolving hydric cyanide in the presence of an acid. As regards cyanogen, its percentage is 42, which makes 44 per cent. of hydrocyanic anhydride. About two years ago, MM. Lelu and Lugan prepared from one ounce and a-half to two ounces of zinco-potassic cyanide. Since then, the vessel in which this has been kept has been frequently opened, but no hydrocyanic smell has ever been detected. Moreover, in March, 1877, the analysis of this substance gave as nearly as possible the same composition as in March, 1875.—("Bullet. Génér. de Therap.," May 30, 1877.)

Action of Digitalis, compared with that of the Biliary Salts, on the Pulse, Arterial Tension, Respiration, and Temperature (by V. Feltz and

E. Ritter).—(*a.*) Whenever biliary salts or the infusion of digitalis [$\frac{1}{100}$] are administered in non-toxic doses, the temperature, with either poison, falls about 2° Fahr.; arterial tension is diminished by from two to three centimetres of mercury in the case of biliary salts, and by from six to seven centimetres in that of digitalis. In both cases the respiration, without departing much from the normal standard, becomes irregular. With either agent the pulse becomes slower. The only difference between them is that, in the case of digitalis, the diminution in the number of the pulsations is but of short duration, and is followed by acceleration which may possibly last twenty-four hours; whereas the abatement of the frequency of the pulse produced by biliary salts lasts for a longer time, and does not give rise to consecutive abnormal acceleration. Again, the animals placed under the influence of biliary salts do not lose so much weight as those to which digitalis is administered. For the former, the loss does not exceed nine ounces and a-half; for the latter it reaches twenty-five ounces. Lastly, after section of the pneumogastric and of the sympathetic nerves, the pulse can still be modified by biliary salts; but it can no longer be influenced by digitalis. This difference, however, does not extend to the temperature or to the respiration. (*b.*) In the case of poisonous doses, those instances of biliary poisoning in which death is delayed for a few hours are the only ones to be compared with cases of digitalis poisoning. In animals which die from biliary intoxication, the temperature and the pulse are regularly lowered until the supervention of death. This abatement can be justly referred to hæmorrhage resulting from morphological alteration of the blood. In dogs, digitalis administered in doses of sixty-eight minims of the infusion for each thirty-one ounces of the weight of the body, gradually and very regularly reduces the temperature 13° or 14° Fahr. At the same time the number of the pulsations, after more or less marked oscillations, falls as low as half its normal standard. From the very beginning of the experiments, arterial tension goes on decreasing, and it may lose up to three centimetres of mercury. Sudden death, sometimes, may supervene. When this accident takes place, it is always at the moment when the pulse is very small and frequent, although the fall of arterial tension and of the temperature is not yet sufficient to indicate imminent danger. No alteration, either chemical or morphological, is ever found in the blood. Considering that, in animals submitted to the action of digitalis, after the pneumogastric and the sympathetic nerves have been cut across, the pulse does not vary in frequency as it does in animals poisoned by biliary salts; considering, also, that the blood of the former shows no alteration similar to that produced by bile poisoning; and, lastly, considering that the way in which the muscular tissue, whether curarized or not, is acted upon, varies according as either poison is employed; it should be concluded that, whilst the biliary salts modify the blood and the muscular tissue, digitalis, more especially, affects the nervous system. This conclusion is supported by the fact that, post mortem, in the case of biliary intoxication, a state of tetanic contraction of the heart is the rule; in digitalis poisoning, on the contrary, the heart is invariably found expanded and containing in each ventricle pretty nearly an equal quantity of blood. Moreover, in the latter cases, provided but a short time has elapsed since the moment of death, the electric contractility of the cardiac muscle remains entire.—("Gaz. Médic. de Paris," No. 27, 1876.)

Digitalis.—By injecting the infusion of digitalis into a vein, M. Lombard ascertained that, as soon as the subject is placed under the influence of this drug, arterial tension progressively abates, the temperature gradually falls, the pulse suddenly loses much of its frequency, and the respiration subsequently becomes irregular. These effects of digitalis were already well known; but, in addition to them, M. Lombard believes that the constant and gradual fall of arterial tension produced by this substance shows that, through its direct influence on the cardiac ganglia, digitalis acts on the heart primarily.—("Progrès Médic.," No. 51, 1876.)

Digitalis in Heart Disease (by H. Bernheim).—In moderate therapeutic doses, digitalis, no doubt, increases the motor power of the heart and abates the velocity of the pulse without diminishing arterial tension. But up to the present time no decisive experiments enable us to determine the action of this drug upon the vaso-motor nerves and upon the muscular sheath of the vessels. With regard to the treatment of functional deficiency of the heart, when there is a presumption that the cardiac tissue is healthy, and when, at the same time, the obstacle which produces asystole is not insuperable, digitalis is indicated. When either of these conditions is absent, digitalis is contraindicated. Thus, in those cases of cardiac palpitation in which strong, full pulse, arterial plethora, and abundant urinary secretion point to exaggerated cardiac activity, those drugs which, like muscarin and aconitin, abate cardiac velocity and arterial tension, should be prescribed to the exclusion of digitalis. Thus, again, in the presence of such functional disturbances as œdema, cyanosis, dyspnœa, dropsy, scanty urine, etc., coexisting with high arterial tension, whether these phenomena are the effects of asystole itself, or whether they depend upon the development of some primary or secondary visceral affection, the use of digitalis would be attended with great danger.—("Leçons de Clin. Médic.," 1877, p. 274, *et seq.*)

Erythrophlæin (by N. Gallois and E. Hardy).—Erythrophlæin is an alkaloid extracted from the bark of the Red-Water-tree, Erythrophlæum Guineense. It is a cardiac poison, and the natives use this bark for the preparation of poisonous arrows. It also enters into the composition of a judicial beverage, hence the name of Erythrophlæum Judiciale, and its powder is a most energetic sternutatory, hence, again, the designation Tillæa Suaveolens. If one-sixtieth of a grain of its alkaloid, erythrophlæin, is injected under the skin of the foot of a frog, the heart will be paralysed, the ventricle remaining in permanent systole, and the auricles in diastole; but immediate death does not follow upon cardiac suspension. For some hours after death, although the heart no longer answers electric stimulation, the nerves and the muscles can still be influenced by electricity. If the poison is placed in direct contact with the heart, its action will be still more rapid, and a smaller dose will suffice to paralyse this organ. By suspending the circulation, one can render the action of the drug much slower; but then poisoning takes place through interstitial absorption. Again, the poisonous effects cannot be prevented by the use of atropia, but they can be much delayed by that of curara. In warm-blooded animals, as a consequence of disturbed hæmatosis, erythrophlæin produces clonic convulsions, and intense dyspnœa. In these animals, death immediately follows upon cardiac suspension. Post mortem, the ventricles are usually found flabby and filled with blood, and the presence of the alkaloid can be detected in this liquid. A subcutaneous injection of one-sixteenth of a grain killed a guinea-pig in the course of a few hours. After the injection of half a grain into the cellular tissue of a dog, the pulse alternately presented acceleration and abatement of frequency; the abatement was accompanied with increased fulness. Towards the fatal termination, the pulse became very weak and frequent. Each injection invariably determined marked increase of arterial tension. Although, for many hours after the heart has become insensible to electricity, the other muscles retain their contractile power, they are, nevertheless, acted upon by erythrophlæin, and this substance should be considered a muscular poison. The cardiac muscle is the first to become paralysed, owing to its receiving, in a given time, a much larger amount of blood. The double chloride of erythrophlæin and platinum suspends the action of the heart of the frog in the same manner as the free alkaloid. The leaves and seeds of the Erythrophlæum Couminga most likely contain an alkaloid, the chemical composition of which is very similar to, if not identical with that of erythrophlæin.—("Bullet. Génér. de Thérap.," Aug. 30th, 1876.)

Etherisation in Young Children (Congress of Clermont).—M. Tripier believes that it is a mistake to consider etherisation in young children safe. Although death was obviated, this practitioner, in three instances of children aged from 5 to 8 years, observed threatening symptoms, the most alarming of which was the sudden arrest of respiration. In one case this occurred three times. As there was no cyanosis, asphyxia cannot be urged as the cause of these phenomena, and the persistency of the normal cardiac rhythm does not admit of the idea of syncope. In fact, these little patients seemed as though they forgot to breathe. In these three cases a quantity of ropy bronchial mucus was expectorated. Since, in his experiments on kittens from three to four weeks old, M. Tripier found no bronchial froth in the trachea, the presence of viscid sputum, in children, does not seem to account for the suspension of respiration. However, at the beginning of the experiments, the kittens presented an arrest of respiration during which the thorax was stopped in the state of inspiration. Whenever, instead of ether, chloroform was used, no bad symptom was detected. M. Tripier is not yet ready to explain the mechanism of this phenomenon, but he suspects that this disturbance may be attributed to some implication of the vagus nerves. At all events, chloroform should be administered to children in preference to ether.—("Rev. Scientif.," No. 9, 1876.)

Ethylic Bromide (by A. Rabuteau).—Ethylic bromide $[C_2H_5B_r]$ is a colourless liquid, of an agreeable odour, boiling at a temperature of about 104° Fahr., little combustible. Its specific gravity is 1·43. M. Rabuteau's experiments on frogs, guinea-pigs, rabbits and dogs, tend to establish that—(*a.*) Ethylic bromide, when inhaled, produces anæsthesia, as absolutely as chloroform, and even more rapidly. After inhaling ethylic bromide from a sponge soaked with it during five, or sometimes only two minutes, dogs are completely anæsthetised. (*b.*) The animals thus treated recover their senses more rapidly than when they are chloroformised. (*c.*) Compared with chloroform, ethylic bromide is neither caustic nor irritant. Its ingestion presents no difficulty; and its application to the skin, to the external auditory meatus and to the mucous membranes, is free from all danger. Therefore, whilst, for the latter purpose, it should be preferred to chloroform, which is very caustic, for the former it is far superior to ether, the ingestion of which, at least when it is given by itself, is almost impossible. (*d.*) A dose of from fifteen to thirty grains, ingested by a man, does not produce anæsthesia or disturb the digestion; but, if pain be present, it will allay it. (*e.*) Ethylic bromide is very sparingly soluble in water. If, however, it is stirred with water, this will acquire a pleasant smell and flavour. Again, in the course of from ten to fifteen minutes, frogs placed in water saturated with ethylic bromide, are anæsthetised. (*f.*) This drug, by whatever way introduced into the system, is entirely, or nearly so, eliminated by means of respiration. Thus, when it has been ingested, traces only are detected in the urine; if it has been inhaled, a minute quantity will appear in this secretion. In the organism, ethylic bromide, therefore, is not converted into any alkaline bromide, such as sodic bromide, for instance, which salt is readily eliminated by the kidney.—(" Gaz. Hebd. de Méd. et de Chir.," No. 1, 1877.)

Morphinism (by L. Calvet).—*Acute Morphinism.* A dose of three-quarters of a grain of hydrochlorate of morphia by intravenous injection, repeated and gradually increased up to one grain and a-half, at first stimulates and accelerates the respiration. Its maximum effect is to double the normal number of inspirations within a short space of time, and to make them more or less jerking and irregular. The first effect, the duration of which usually is very short, is followed by hypnotism, or narcotism. The respiratory movements then become slower and more regular. Sudden temporary arrest, *i.e.*, respiratory syncope has been observed to follow the intravenous injection of from three quarters of a grain to one grain and a-half of hydrochlorate of morphia. As regards cardiac phenomena, in the first moments the systole becomes stimulated and accelerated; and, like that of inspirations, the number of the cardiac beats may be doubled.

This ataxic acceleration of the heart may lead to temporary arrest, so that cardiac, as well as respiratory syncope, may possibly supervene. Subsequently to this acceleration stage, the heart's action gradually becomes slow and regular. A few minutes after the administration of the drug, ophthalmoscopical examination shows a pale anæmic condition of the papilla, the arteries of which seem to be contracted and the veins somewhat congested. The state of the retina, of course, varies with the alternate modifications of respiration and circulation. At the beginning, the temperature slightly rises; but subsequently it rapidly abates, and its average fall is 3·6° Fahr. A subcutaneous injection gives results similar to, but less rapid and less intense than those produced by the intravenous method. Whatever be the mode of administering morphia, large doses, at once and without any previous respiratory or circulatory acceleration, produce narcotism.

Chronic Morphinism.—Experiment shows that, in the course of about a week, the weight of the body notably decreases. From that moment, extreme emaciation rapidly develops. The fall of the temperature is continuous and gradual. On the day preceding that of death, the thermometer marks 95° Fahr. During the first days an increase of the salivary and of the renal secretion follows upon each hypodermic injection. Afterwards, both these secretions rapidly diminish, and they may even become entirely suppressed. In the confirmed stage of chronic morphinism, the optic papilla is pale and anæmic; and it looks as though its blood-vessels, and especially its arteries, had disappeared. Death sometimes results from asphyxia. At other times the fatal termination takes place in the midst of most intense convulsions, very similar to those of strychnism. Post mortem, the encephalic and the intrarachnidian organs present a markedly anæmic condition. Apoplectic patches are scattered through the pulmonary tissue; asphyxic clots are found in the heart, and ecchymotic spots in the stomach. The intestinal mucous membrane is hyperæmic; the liver and kidneys are congested.—("Gaz. des Hôpit.," No. 29, 1877.)

CLIMATOLOGY.

Phthisis in Algeria.—The following are some of M. Feuillet's conclusions:—(*a.*) The relative average of deaths from consumption is much less in Algeria than it is in Europe. (*b.*) Phthisis is rare amongst the natives.—("Gaz. Médic. de Paris," No. 34, 1876.)

Mont-Dore.—At the Congress of Clermont, M. Lassalas recommended the inhalation of the Mont-Dore water for hæmoptysis. Under the influence of this treatment the pulse, without losing its strength, becomes less frequent; the respiratory movements increase in extent, and the blood-spitting is directly arrested. This result should not be attributed to the effect of altitude, which is 1,050 metres. In fact, it is not at all uncommon at Mont-Dore to see hæmoptysis occurring in patients who never before had been the subjects of this accident. However, a course of inhalations suffices to suppress it. M. Lassalas is by no means prepared to say that every case of hæmoptysis must necessarily yield to this treatment. Nevertheless, although his predecessor at Mont-Dore, M. Bertrand, held blood-spitting to be a decided contra-indication to the use of mineral water, M. Lassalas, out of 120 cases of hæmoptysis thus treated, did not meet with one failure.—("Rev. Scientif.," No. 9, 1876.)

Mont-Dore (by Richelot).—The Mont-Dore treatment is a sedative to the nervous system and to the circulation. It also obviates pulmonary congestion. As a sedative to the circulation, it may prove debilitating in some subjects. Although the Mont-Dore hot baths may sometimes produce stimulation, this effect, in most cases, is very much modified by that profuse sudation which results from exposure to high temperature. "I cannot," said Cruveilhier, "lay sufficient stress upon the fact that tubercle, of itself, does not fully account for the amount of danger which arises from pulmonary phthisis. If one could succeed in keeping tubercular lungs free from secondary pneumonia, many cures would be realised." This object can be obtained through the Mont-Dore treatment. By obviating the tendency to pulmonary congestion and to subsequent hæmoptysis, this treatment causes feverishness to subside. In addition to producing these effects, it promotes the more or less complete resolution of pre-existing pneumonic patches and inflammatory thickening. By encroaching upon the respiratory area, these lesions diminish the vitality of the pulmonary tissue, and thus further the development of the morbid products. In the early stages of phthisis Mont-Dore generally proves a success. But in cachectic cases it utterly fails. The inflammatory form of consumption, marked pyrexia, nervous erethism, and hæmoptysis should be considered as so many indications of the Mont-Dore medication. In treating strumous or anæmic subjects, and in cases of acute tubercle or of galloping phthisis, this medication should be precluded. The Mont-Dore water can be prescribed in different ways. In many cases in which neither inhalations nor baths are well supported, its internal use is the sheet anchor. Some patients cannot digest the water from the late "Madeleine," now "Bertrand," source." Of all the Mont-Dore sources, "Ramon" source is the most chalybdeate; this also is generally found to be the most digestible. Next to the internal use, inhaling the vapour is the most frequent mode of treatment. Pediluvia, taken in the streams of the various sources and consequently at the native temperature, are also very often prescribed. They are sometimes very beneficial. At other times, however, they promote profuse perspiration and, perhaps subsequent chilliness. Hence, the necessity of closely watching their effects. The general bath must be moderately warm. It is an efficient sedative and anodyne. It abates the frequency of the pulse, soothes the nervous erethism, and procures sleep. Its use, of course, requires great precautions and care. The hip-bath may be either warm or hot. The warm hip-bath is found most convenient in those cases in which general baths are not well supported. The hot hip-bath, *i.e.*, at a temperature of from 107° to 111° Fahr. is very seldom indicated in pulmonary phthisis. In some cases, inveterate hæmoptysis may be checked by this therapeutic means. Nevertheless, considering the risk with which its use is attended, the hot bath as a rule, should be discarded from the treatment of consumption. Lastly, provided the state of the patient admits of its use, the shower-bath may be expediently combined with tepid baths. It should be applied to the scapulo-dorsal region. If its intensity is moderate, it will assist in promoting the resolution of pulmonary congestion. If, however, it is too energetic, it will increase this congestion and determine hæmoptysis. Its application, therefore, requires close watching. June is the best month of the Mont-Dore season. July and the earlier part of August are too hot, and later on the climate soon becomes too cold.—("Union Médic.," No. 61, 1877.)

MISCELLANEOUS.

Excessive Slowness of the Heart.—During the last five years, M. Vigouroux has frequently examined the heart of a farmer, whose pulse he has invariably found to beat only twenty times per minute.

This man, whose life is a hardworking one, enjoys excellent health, and presents no cardiac murmur.—("Gaz. des Hôpit." No. 29, 1876.)

Anomaly of the Lung.—M. Golay saw a right lung which had only two lobes, and the interlobar fissure of which was single, and presented the same disposition as that observed in the left lung.—("Progrès Médic.," No. 55, 1876.)

Absence of Phthisis in the Ape.—M. Bochefontaine has performed the post mortem examination of nine apes which died at the Paris Acclimatisation Garden. In these nine cases, lesions referable to generalised bronchitis were present; and, in one instance, the presence of caseous pneumonia was ascertained; but no trace of tubercle could be detected. It appears, therefore, that in Paris apes do not die phthisical.—("Gaz. des Hôpit.," No. 18, 1877.)

UNITED KINGDOM OF GREAT BRITAIN AND IRELAND.

(*Report by* R. SHINGLETON SMITH, M.D. Lond., B.Sc., M.R.C.P.; *assisted by* R. WHARRY, M.B., M.C., etc., *Assistant Editors.*)

ANATOMY AND PHYSIOLOGY.

Apertures in the Septum Ventriculorum.—Dr. Dyce Duckworth reports a case in which a small aperture was found in the septum ventriculorum, *near the apex*, of a heart taken from the body of a male child, still-born at full time, and supposed to be cyanotic at the time of birth. The unusual situation of the opening, near the apex instead of towards the base of the heart, presents a striking peculiarity. It seemed likely that, during systole, the small aperture would be completely closed, and no intermixture of blood-currents would occur; the significance of the pervious septum would, therefore, be no greater than that of an imperfect foramen ovale.—("Journal of Anatomy and Physiology," Vol. XI., Part I.)

Univentricular Heart.—Dr. Robert Elliot reports a case of this kind with the following peculiarities:—transposition of the great vessels, smallness of the aorta and large size of the pulmonary artery, total absence of the ventricular septum, all but total freedom from pericardial adhesion, equally healthy and efficient lungs, the attainment of the age of 19 years and 8 months, and amiability with good humour. Cyanotic symptoms had been first observed at 3 months, and gradually increased with age.—("Journal of Anat. and Physiology," Jan., 1877.)

Average Weight of the Heart in males and females, from 20 to 55 years of age, in health and in acute and chronic diseases:—

Males—	
Mean weight	9 oz. 8 drms.
Ordinary range in acute cases	9 oz. to 11 oz.
Ordinary range in chronic cases	8 oz. to 10 oz.
Females—	
Mean weight	8 oz. 13 drms.
Ordinary range in acute cases	8 oz. to 10 oz.
Ordinary range in chronic cases	7 oz. to 9 oz.

Pirogoff gives the width of the healthy heart as one-half the width of the chest in two cases; as one-third in four cases; and in six it varied in the proportion of from 3·9 in. : 10 in. to 4·6 in. : 10 in. In no case was the width of the heart more than half that of the chest. Dr. Sibson, however, found that in one-third of his cases the width of the heart was greater than one-half that of the chest, and accounts for this discrepancy by suggesting that Pirogoff did not make his sections across the widest part of the heart, and that the width of the heart was measured from precisely opposite points; while, in his own cases, the measurement of the heart was made from the point of the heart furthest to the left, which was near the apex, to the point of the heart furthest to the right, which was about the middle of the right auricle.—(Reynolds' "System of Medicine," Vol. IV.)

Site of the Tricuspid Valve.—Dr. Sibson estimates from Pirogoff's sections that the average site of the top of the tricuspid valve is behind the lower portion of the third space, or the upper edge of the fourth cartilage; while the average position of the lower boundary is about the level of the fourth space, or upper part of the fifth cartilage.—(Reynolds' "System of Medicine," Vol. IV.)

The position of the Aortic Sinuses and the Flaps of the Aortic Valve.—The lower boundary of the orifice of the pulmonary artery corresponds with the upper boundary of the aortic orifice at the junction of the anterior and left posterior flaps of the aortic valve, nearly half of the pulmonary orifice being just above the left posterior aortic sinus, and more than half extending to the left of the aortic orifice. The aortic opening looks obliquely downwards to the left, and slightly forward towards the apex of the ventricle; it is situated in front of the mitral valve, between the tricuspid and pulmonary valves, which are somewhat anterior to it, and has the conus arteriosus in front of it.

The aortic vestibule corresponds to the conus arteriosus. It is directed upwards, bearing to the right, and then bending forward to the orifice of the aorta. The conus arteriosus ascends, bearing to the left, and bends backwards to the pulmonary orifice. The three flaps of the aortic valve and their corresponding sinuses are placed relatively, one anterior and two posterior and lateral. The crescentic edge of the anterior sinus is attached to the central fibro-cartilage at the summit of the ventricular septum. The left and right halves respectively of the right and left posterior flaps are attached to the anterior cusp of the mitral valve and the aponeurosis continuous with it.

The position of the heart is materially altered by respiration. At the end of deep inspiration the inferior boundary of the heart may be two inches lower in its relation to the chest-wall than at the end of forced expiration; thus, in the latter state, the lower boundary of the heart may be behind, or even above, the lower end of the sternum; while, in the former state, it may be below the lower end of the ensiform cartilage. This change of position is due partly to the heart being drawn down by the descent of the diaphragm, and partly to the ascent and advance of the ribs. In robust persons, leading an active and laborious life, the heart is placed high in relation to the chest-walls. In the feeble, and those who lead a sedentary life, the relation of the heart to the chest-wall approaches that seen after forced expiration in the robust. In children the position of the heart is relatively high.—(Reynolds' "System of Medicine," Vol. IV.)

The Mechanism of the Sounds of the Heart.—Dr. C. J. B. Williams concludes that the sounds of the heart are *not* produced by any *motions or collisions of the blood*, because no such sounds can be produced in fluids alone, but that they are produced by the tightening of the walls and valves.—("Brit. Med. Jour.," Sept. 30th, 1876.)

Reduplication of the First Sound of the Heart.—Dr. George Johnson, in his Lumleian lectures on the muscular arterioles, discusses this phenomenon. Dr. Sibson explains the reduplication by stating that the left ventricle, owing to the resistance offered by the tight arteries to the expulsion of its contents in cases of high arterial tension associated with Bright's disease, continues its contraction later than the right, which has expelled its blood into the pulmonary artery with comparative ease. In consequence of the left ventricle contracting more tardily than the right, there is a doubling of the first sound. Dr. Johnson considers that anatomical and pathological difficulties prevent the acceptance of this theory of asynchronous contraction of the ventricles, and he substitutes for it the following in explanation of the doubling of the first sound of the heart in Bright's disease, the second sound remaining single, viz., that the contraction of a dilated, and especially of an hypertrophied *auricle* becomes audible, and thus that the first division of the double first sound is the result of the *auricular* systole. The rhythm of the heart-sounds in a case of reduplication of the first sound is precisely the same as that of the triple friction sound of pericarditis.—("Brit. Med. Journ.," April 28th, 1877.)

Effects of the Constant Current on the Heart.—Dr. M. Foster and Mr. A. G. Dew-Smith (Cambridge) record some observations, from which are drawn the following conclusions:—

The vertebrate heart, such as that of the frog, behaves towards the constant current in a manner very closely resembling that in which the snail's heart behaves.

The well-known, easily recognised, ganglia of the heart play a subordinate part in the production of the heart's spontaneous rhythmic pulsations. The real origin of these is to be sought for in the phenomena of muscular tissue, unless some new form of nervous tissue, which has hitherto escaped detection, be discovered.

The constant current may, according to circumstances, call forth or put an end to rhythmic pulsations, calling them forth when they are absent, and diminishing or destroying them when they are spontaneously present. Hence, here, as in the case of the snail's heart, stimulation and inhibition are shown to differ from each other in degree, or according to circumstances, rather than in kind.

Stimulation of the vagus produces an effect on the muscular tissue of the heart; its inhibitory action is not confined to the ganglia, and hence vagus inhibition does not differ so essentially from the inhibition of the snail's heart by direct stimulation as might at first appear.—(" Journ. of Anat. and Physiol.," Vol. X., Part IV., July, 1876.)

Slow Pulse of Jaundice.—In a case where the pulse was slow and the heart's action irregular, in consequence of the circulation of bile-products, Dr. Foster prescribed tincture of belladonna in fifteen minim doses. He had found belladonna to act as a stimulant, rendering the heart's action regular again. Similar results occurred in cases of depression from digitalis.

Slow Pulse, Cardiac Disease.—In a patient under the care of Dr. Russell the pulse had never been more than 34 per minute during a period of ten months, or, according to the patient's statement, for the last five years. There was complaint of epigastric pain, and a systolic bruit was heard over the base of the heart.—(" Hospital Notes," Birmingham; " Brit. Med. Journ., Oct. 7th, 1876.)

Slow Pulse.—Dr. C. Handfield Jones gives particulars of two cases of slow pulse, associated with seizures of an epileptoid character. In one of these, a shopman, aged 62, the pulse was as low as twenty-eight, and the temperature was, on one occasion, 95·2°; the heart was apparently sound. In the other case, a Frenchwoman, aged 65, the pulse was observed, on one occasion, to be as low as twenty-three; the heart-sounds were weak, but the pulse was of fair force, although irregular.

The question whether cardiac debility alone is sufficient to give rise to the nervous phenomena manifested in both these cases, is considered, and Dr. C. Handfield Jones expresses his belief that the peculiar seizures would not have occurred had there not been a decided epileptic tendency pre-existing.—(" Lancet," Dec. 30th, 1876.)

Slow Pulse.—Dr. Bradbury reports a case of remarkably infrequent pulse in a man 70 years of age. On several occasions the pulse was below thirty, twice it was as low as twenty-six per minute. Several attacks of syncopal convulsions occurred during the last few days of life. After death it was found that the heart fibre had undergone considerable fatty degeneration. The "Cheyne-Stokes" rhythmical irregularity in the breathing was present.—("Lancet," April 7th, 1877.)

Rapid Action of the Heart.—Dr. Cheadle reports a case of glycosuria, associated with extremely rapid action of the heart, vomiting, constipation, dyspnœa, and vertigo. In one of the syncopal attacks, which were frequent, the heart was found to be beating at the rate of 300 per minute; for twenty-four hours previously the pulse-rate continued as high as 156. The concurrence of the various symptoms seemed to point to some nerve-mischief in the region of the medulla near the origin of the eighth pair of nerves. Careful microscopic examination of the cord did not reveal any material lesion; there was no erosion of nerve-substance around the vessels, such as is reported by Dr. Dickinson as occurring in diabetes. It seemed probable that some nerve-lesion, which remained undetected, was the common cause of the saccharine urine, the rapid heart-beat, the vomiting, the torpor of the intestines, the faintness, and the dyspnœa, with the fatal syncope at last.—("Med. Times and Gaz.," March 3rd, 1877.)

Molar Movements of the Human Body produced by the Circulation of the Blood.—Mr. J. W. Gordon finds that a person standing erect on an ordinary spring weighing-machine, and maintaining all possible stillness, imparts a rhythmic movement to the index synchronous with the pulse, and according to the following rule:—At each occurrence of systole in the heart the needle will be vigorously deflected towards the zero point of the dial, and in the intervals of systolic action will return by a slower movement to the starting point; this point nearly coinciding with that at which the needle would rest if the subject were laid horizontally on the bed of the instrument. The phenomenon is the result of a recoil in the opposite direction to the course taken by the greatest column of blood in the body, that which is propelled downwards along the aorta almost in the line of the axis of the body. By adapting a sphygmographic arrangement to the index of the weighing-machine, tracings may be obtained which essentially resemble those taken direct from an artery.—("Journ. of Anat. and Physiol.," April, 1877.)

Double Aortic Arch.—Dr. Watson, at a meeting of the Manchester Medical Society, exhibited a specimen of double aortic arch from the human subject. The right aortic arch was partially obliterated. Through the arterial collar formed by the two arches the trachea and œsophagus passed, but the thoracic duct did not so pass.—("Brit. Med. Journ.," December 9th, 1876.)

Arterial Tension.—The late Dr. Francis Sibson, in his "Harveian Lectures" on Bright's disease, gave an elaborate description of the condition of the heart and vessels associated with arterial tension from blood-contamination.

The presence of a sharp second beat over the enlarged ascending aorta to the right of the upper portion of the sternum, mainly in the second space, is stated to be associated chiefly with granular kidney in its advanced stage, but to have been observed also in a few rare cases of acute Bright's disease.

The presence of a loud metallic intensified second sound and a muffled or feeble first sound over the ascending aorta, are constant signs of arterial tension associated with every form of Bright's disease.

In cases where doubling of the second sound *over the region of the conus arteriosus* has been observed, Dr. Sibson found that, in cases of Bright's disease, it is the second second sound which is the louder and more metallic of the two second sounds, thus evidencing that the reflux blow of the aorta with its second sound follows that of the pulmonary artery. This is the reverse of what takes place when there is doubling of the second sound *over the pulmonary artery*, owing to an obstacle to the flow of blood through the lungs; then the second second sound is the louder of the two.

Another sign of arterial tension observed is a doubling of the first sound. This is usually limited to the region of the septum, or a little within the mammary line, and from one to two inches below the level of the nipple; the second of the two sounds—that caused by the systole of the left ventricle, and heard on the left side of the septum—is the louder of the two.

A double first sound and a double second sound have been heard simultaneously within a limited area over the upper end of the ventricular septum.—("Brit. Med. Journ.," Jan. 13th, 1877.)

Transposition of Thoracic and Abdominal Viscera.—Mr. William Moxon reports the case of a patient, admitted to the Birmingham General Hospital in a state of collapse from being crushed between two buffers of railway carriages, whose heart was found to be transposed, the apex being directed downwards and to the right, extending to a point two inches below and one inch to the sternal side of the right nipple. The right lung was notched to receive the heart. The large lobe of the liver was found to occupy the left hypochondriac region, the smaller lobe being on the right side. The stomach was situated on the right side, in its normal relation to the transposed liver. The spleen occupied its normal position as regards the stomach, but was on the right side of the abdominal cavity. The intestines were entirely reversed, the cæcum occupying the left iliac fossa.—("Lancet," Nov. 25th, 1876.)

The Timbrometer.—Mr. E. H. Forjett (Edinburgh) has devised two instruments for the purpose of auscultation of the musical vibration-notes produced over the different internal organs, and by means of which the limits of internal organs may be accurately determined. The one instrument is a modification of the ordinary differential stethoscope, made sufficiently stiff to be held *in situ* by the mere pressure of the head; the other consists of a piece of flexible steel, bent as a bow, and held tense by catgut. The stethoscope is applied over the organ to be examined; the bow, held in the left hand, is applied firmly to the skin, and the catgut is then "twanged" with the right hand. Solids give a clear, musical note, and cavities and organs containing air give a dull note.—("Med. Times and Gaz.," June 24th, 1876.)

Exostosis upon the First Rib.—Mr. J. W. Hulke, in a clinical lecture on this subject, describes three cases in which a difficulty in diagnosis might have arisen. The patients were all women, the ages being 15, 20, and 19 respectively. Two other cases, seen by Mr. Hulke, were also women. Mr. Hilton and Sir Wm. Fergusson, who had also seen three or four cases, report that all were of the female sex. —("Med. Times and Gaz.," Feb. 24th, 1877.)

Intercostal Muscles.—Professor Rutherford, being convinced that the model of the action of these muscles by means of parallel bars and elastic bands is erroneous in principle, adopts the less fallacious method of applying the elastic bands to the ribs of a skeleton by means of nails.—("Lond. Medical Record," Nov. 15th, 1876.)

Nervous Apparatus of the Lung.—In the Biological section of the British Association, Dr. Wm. Stirling described the nerve-supply to the lungs. Numerous nerves from the pneumogastric and sympathetic accompany the blood-vessels, and in the course of these nerves small ganglia can easily be detected by means of a dissecting microscope. The ganglia are most numerous around the bronchi at the base of the lung. The probable destiny of the two sorts of nerve-fibres found in the ganglia was indicated: the white fibres supply the bronchial mucous membrane and the bronchial muscles, while the grey fibres probably preside over the muscular fibres of the blood-vessels. — ("Brit. Med. Journ.," Sept. 23rd, 1876.)

The Phthisical Temperament.—Dr. Wilks, in a lecture delivered to the National Health Society on the importance of studying temperaments, alludes to the tendency to consumption which exists in England as follows:—

"Circumstances of climate, I apprehend, have given a start to this proclivity, and the tendency is developed into a diathesis in the course of generations. The child born of consumptive parents is generally well formed, but not robust, the framework is well proportioned, and the whole organism shows great activity. There is a quick circulation, and the brain and every other organ of the body is working at high pressure. The child is highly intelligent, and he continues so when grown to a young man: he is fond of exercise, and boasts of his walking feats. At the same time that the body appears over-oxygenated, and all the functions are performed with great activity, the digestive powers are not strong, the appetite is small, and there is a dislike to fat, alcohol, and all hydrocarbons on which his oxygen may feed."—("Brit. Med. Journ.," Dec. 30th, 1876.)

The Human Voice.—Mr. C. R. Illingworth adduces a new theory of the falsetto voice. He considers that the shape and relations of the laryngeal cavity, and the fact that the emission of a falsetto note gives rise to a sensation of vibration referable to a point higher in the larynx than that produced by the emission of a true note, warrant the supposition that the cavity of the larynx, bounded below by the true vocal cords, and above by the false, and extending on each side up into the laryngeal sacculi, is used in the production of the falsetto voice, in the same way as the mouth is used in whistling, or a hazel-nut shell with a small hole through which the kernel has been extracted.—("Edinb. Med. Journ.," Dec., 1876).

The Pneumogastric Nerve.—The influence of the vagus upon the larynx may be manifested as a spasmodic irritation or a paralytic weakness, and each of these may be central in character or be produced by local or peripheral causes.

Larynx:

Spasmodic irritation	Central	In epilepsy and functional disease of the brain. In laryngismus stridulus. In hooping cough.
	Local	In catarrh and laryngitis. In croup and diphtheria. In the different forms of ulceration, etc.
	Peripheral	Irritation of the uvula. In aneurisms pressing on the recurrent nerve. In early phthisis. In heart disease. In enlarged glands. In hysteria.
Paralytic Weakness	Central	In exhaustion. In disease of brain, as apoplexy. In cerebral aphonia. In labio-glosso-laryngeal paralysis.
	Local	In diphtheria.
	Peripheral	In aneurism. In pressure on the pneumogastric or recurrent nerve by tumours. In hysterical aphonia.

The œsophagus is largely supplied, and its muscular movements regulated by the pneumogastric. Increased irritability of its nerve supply throws it into a state of spasmodic contraction, and exhaustion of its nerve power weakens and paralyses it.

Œsophagus:

Spasmodic stricture	Central	Mania. Epilepsy. Nervous irritability.
	Local	Foreign bodies. Pressure on the canal by tumours; enlarged glands; aneurism. Organic obstruction and ulceration.
	Peripheral	Hysteria. Disease of heart. Disease of aorta, and aneurism. Flatulence.

Paralysis	Central	Exhaustion.
	Local	Pressure on pneumogastric nerve; aneurism, etc.
	Peripheral	Disease of stomach, etc.

The pathological relations of the vagus with the lungs and with respiration are next to be considered. When irritated there is quickened respiration, and even violent cough with dyspnœa. When the respiratory centre is weakened or paralysed respiration is slow, but deep and irregular.

Lungs:

Spasmodic irritation	Central	Irritability from exhaustion. In fevers, etc. Asthma (spasmodic). Hooping cough.
	Local	Hay asthma. Bronchitis. Pneumonia. Emphysema, etc.
	Peripheral	In hysteria, producing hurried breathing, etc In heart disease, producing cardiac asthma. In gastric disease. In gout, etc.
Paralysis	Central	Respiration slow; congestion producing pneumonia and bronchitis. Poisoning by opium. Apoplexy, etc.
	Local	Cold shock, producing bronchitis, pneumonia, often without cough.
	Peripheral	Patients dying of cancer of stomach, or uterus, of chronic gastric ulcer, etc., often have pneumonia, which is not due to septic changes.

Irritation of the cardiac nerves and of the pneumogastric causes pain and distress, the movements of the heart may be retarded, the diastole prolonged, and the pressure within the vessels diminished. Exhaustion of the vagus causes the heart to beat at first with increased force.

Heart:

Spasmodic irritation Angina	Central	Nervous shock. Renal disease. (?)
	Local	Diseased coronary arteries.
	Peripheral	Gout, etc.
Paralysis	Central	Apoplexy.
	Local	Pericardial effusion, carditis, etc.
	Peripheral	Acute disease of the abdomen. Peritonitis, etc. Cold in the stomach, or a sudden blow.

Irritation of the pneumogastric supplied to the stomach causes pain and muscular contraction (sometimes hour-glass), several kinds of vomiting, altered secretion, and occasionally perverted sensation, such as craving appetite, with weakness. In paralysis of this nerve supply we have loss of appetite, anorexia, and distension of the stomach.

Stomach:

Spasmodic vomiting	Central	Concussion of brain.
		Acute cerebral disease.
		Abscess in the brain.
		Tumour in the brain.
		Tubercle in the brain.
		Apoplexy.
		Over anxiety and distress.
		Epilepsy.
		Persistent irritability of the stomach.
	Local	Inflammation of mucous membrane.
		Ulceration.
		Cancerous disease.
	Peripheral	Phthisis; tubercle in the lung.
		Disease of heart.
		Uterine disease.
		Ovarian disease.
		Chlorosis; hysterical vomiting.
		Renal disease; disease of supra-renal capsules.
		Hepatic disease.
		Intestinal disease.
		Peritoneal, etc.
Spasmodic pains, etc.	Central	Perverted appetite, excessive craving.
		Neuralgia.
	Local	Hour-glass contraction.
		Ulceration, etc.
		Organic disease.
	Peripheral	Cardiac disease.
Paralysis Anorexia Distension	Central	Distension from exhaustion and nervous shock.
		Anorexia.
	Local	Rapid fermentation, causing distension.
		Distension from obstruction.
	Peripheral	Distension from peritonitis.
		Distension from abscess.
		Distension from empyema.

("Lumleian Lectures on the Pneumogastric Nerve," by Dr. Habershon, 1876.)

Sleep.—Dr. Lauder Brunton remarks, that when we know the connection between anæmia and sleep, active circulation and mental activity, we are able to choose our remedies accordingly. If the patient constantly falls asleep when standing or sitting, and cannot sleep when lying down, we know that the vessels are probably flaccid, and allow the blood to gravitate to the lowest point, away from the head in the upright and to it in the recumbent posture. In such cases we know that digitalis will probably be useful by giving contractile power to the vessels, and chloral injurious by weakening them. But when the tight arteries and powerful heart seem to be driving the blood too rapidly through the brain, then we have recourse to chloral, for its weakening action on the heart and vessels will now aid its action on the nervous tissue.—("Brit. Med. Journ.," March 31st, 1877.)

Transposition of Viscera.—Dr. Lees exhibited before the Pathological Society of London a pale and fair boy, 8 years of age, in whom the viscera were transposed. The apex-beat was distinct on the right side, and the liver lay on the left. The right testicle hung lower than the left.—("Brit. Med. Journ.," Dec. 23, 1876.)

ETIOLOGY.

Sex as a cause of disease:—(*a.*) *Exophthalmic Goître.*—Dr. J. Braxton Hicks, in his Croonian Lectures on the difference between the sexes in regard to the aspect and treatment of disease, mentions that in Graves's disease females are affected largely in excess of males. In simple bronchocele the same fact is observed. (*b*) *Tendency to Hæmorrhage in Women.*—Dr. Hicks points out a condition, the excess of a physiological phenomenon, tending to hæmorrhages, or sometimes only to effusions of serum. If menstruation be interfered with, the vascular tension remains, and vicarious hæmorrhage may occur at any spot where the vessels are weak. A tendency to periodical recurrence of arterial tension is a constant fact in women, and is of occasional occurrence in men. There also exists in women a greater tendency to local congestions (blood-stases).—("Brit. Med. Journ.," April 14th, 1877.)

Acute Tonsillitis dependent on Atmospheric Fungi. — Staff-surgeon Henry F. Norbury, R.N., of H.M.S. "Juno," having found the air of the ship to contain a large number of globose spores of fungi, noticed that these spores corresponded exactly with many found on yellowish-white elevations that appeared on the tonsils of twelve men suffering at the time from acute tonsillitis. No similar cases of tonsillitis were seen prior to the appearance of the spores in the air. —("Lancet," Jan. 13th, 1877.)

Effect of Over-work on the Heart and Aorta.—Dr. James Barr publishes three cases of cardiac disease in which over-work seemed to be an important element in the etiology. He considers these cases as fair examples of the early degeneration of the vascular system, which is so common in our labouring population, and which seems to result from mechanical injury arising from over-exertion. The sequence of events, as arranged by Dr. Clifford Allbutt ("St. George's Hospital Reports," 1870), is considered by Dr. Barr to be open to grave question. Facts are quoted to show that the left side is the one primarily affected; whereas Dr. Allbutt places dilatation of the right heart as the first of the morbid conditions induced. There are cases where the chronic morbid changes arise in the following order:—

(1.) Hypertrophy, or hypertrophy with dilatation of the left ventricle, and a slight increase in growth and capacity of the right ventricle to meet the greater requirements of the system. This condition is associated with high arterial tension, increased aortic recoil, and greater supply of blood to the heart.

(2.) Chronic inflammation of, and atheromatous changes in, the aorta and aortic valves, and frequently also in the coronary arteries.

(3.) Loss of elasticity and dilatation of the aorta; consequently the blood is not propelled through the coronary arteries with its former momentum, nutrition fails, and dilatation of one or both sides of the heart takes place.

(4.) Incompetence of the aortic valves, with reflux of blood during diastole, which tends to produce still greater dilatation of the left ventricle.

(5.) This extra strain is met by further compensatory hypertrophy.

(6.) Failure in the compensation, owing to defective nutrition, with still greater enlargement of the left ventricle, and perhaps also of the right.

(7.) Over-loading of the pulmonary circuit with or without incompetence of the mitral valves.

(8.) Additional distension of the right ventricle.

(9.) Dilatation of the tricuspid orifice.—("Edinburgh Medical Journal," Dec., 1876.)

At the Annual Meeting of the British Medical Association, the President of the Medical Section, Dr. Charles Chadwick had arranged for a series of papers on the question of disease induced by the inhalation of irritant substances in trades.

Effects of Trade.—Dr. John Charles Hall read a paper on the effects of the trades of Sheffield on the workmen employed in them, with special reference to inhaled irritants. The principal classes of those who suffer are wet- and dry-grinders, cotton-carders, chaff-cutters, and stone-masons. The symptoms of grinders' disease were described; all dry-grinders suffer most—those employed in grinding forks, razors, scissors, needles. Slides, containing specimens of the expectoration were shown, on which particles of silicious and metallic substances were visible. The post-mortem appearances are those resulting from a process of chronic inflammation in the bronchial glands and in the lungs themselves. Proper ventilation of the workrooms, and the use of a fan to carry away the particles of dust, are the means by which such results may be, to a great extent, prevented.

Dr. T. B. Peacock drew attention to the French millstone-makers' proclivity to phthisis. Men apprenticed to this trade as boys rarely live beyond the age of 30 or 40; death arises from pulmonary symptoms, and the indurated lung-tissue is found to contain a considerable proportion of silex. The disease of the lungs of Cornish miners is probably dependent on impurity of the air and heat of the deep workings, together with the strain on the lungs and heart in climbing the ladders. In the lead mines of the northern counties the dust inhaled is probably a more important [illegible] causing lung disease than in Cornwall.

Dr. C. D. Purdon communicated a paper on the injurious effects produced in the lungs from the inhalation of flax-dust. He described the symptoms and progress of mill fever, and the peculiar irritating qualities of the dust from different kinds of flax.

Dr. Beveridge referred to the occurrence of phthisis amongst the granite masons of Aberdeen. Granite working is stated to be a healthy occupation as compared with other trades, as the work is virtually carried on in the open air.

Dr. Charles Elam spoke of the presence and tolerance of foreign matters in the lung. Three cases were described, one a fork-grinder, another a stone-cutter, and the third a coal-miner. They all died with symptoms of phthisis, and in the lungs were found quantities of sandy matter and coal-dust.

Dr. J. T. Arlidge alluded to the diseases incident to the manufacture of pottery. The persons employed suffer from—

(1.) The inhalation of dust consisting of silica and alumina.

(2.) The inhalation and absorption of lead.

Fibrosis of the lung-tissue, and lead poisoning in every variety result.

Dr. Farquharson drew attention to the observations of Dr. Richardson on industrial phthisis:—He alluded to the peculiar inflammatory disease of the bones produced by the inhalation of fine particles of pearl; to the inhalation of the fluff of red silk, simulating hæmoptysis; to the diseases of paper-makers and hair-dressers, and to the emphysema resulting from flour. Dr. Richardson's feather mask or respirator was described, and the superiority of feathers over all other filtering agents was pointed out.

Dr. W. T. Gairdner made some remarks on colliers' black-spit. He observed the following stages:—

(1.) When the carbon seemed to be superficially deposited in the air-passages, and when a few days' intermission from labour would suffice to remove the black tinge from the sputa.

(2.) When the black-spit remained permanently.

(3.) The stage of active destruction of tissue or fibrous cirrhosis. He considered that the comparative tolerance of the lungs to irritation of this kind must be due to the "scavenger function" of the muscular tissue of the bronchial tubes.—("Brit. Med. Journ.," Aug. 26th, 1876.)

Mr. W. Holder described the effects of lead-inhalation and absorption amongst the workers in white-lead manufactories. The treatment recommended was the dilute sulphuric acid, belladonna, the Turkish bath, precipitated sulphur; in chronic cases iodide of potassium, and persistent faradisation.—("Brit. Med. Journ.," Sept. 2nd, 1876, and Oct. 14th, 1876.)

The diseases which prevail among *workers in flax.*—Dr. C. D. Purdon, following up the subject of his paper read before the British Medical Association, describes the effect induced by the inhaling of flax-dust—called by the workers, "Pouce." The chief symptoms are cough and dyspnœa coming on in paroxysms; in many cases life is soon terminated by phthisis. Another disease which generally attacks raw hands in the spinning department is called "mill fever." Its symptoms are rigors, nausea, vomiting, pain in the head, thirst, heat of skin, etc. They continue from two to eight days, and are said to be due to the smell of oil together with the vapour and heat of the spinning-rooms. A cutaneous papular eruption is caused by the flax water on the skin of young persons and children, and those engaged in the bleaching of yarn suffer from a kind of eczema of the fingers and hands.—("Dublin Medical Journal," Nov., 1876.)

Aneurism and Heart Disease in the Army.—Surgeon-Major William Curran details his experience of death from these causes in the army, and he states his individual conviction that there are not, in this country at least, any agencies which tell in this respect more against the soldier than they do against his civilian brother. He believes that the "soldier's spot" has probably as much connection with the cross-belts as Macedon has with Monmouth, or the Goodwin Sands with Tenterden steeple.

He reports ten cases which had come under his observation, adding that a system of non-interference is one of the principal lessons which they teach, and that masterly inactivity must be the rule of practice. As regards the etiology of these diseases, he believes that the same or similar causes are equally or more prevalent among the civil population of the lower classes than they are among soldiers.—("Edinb. Med. Journ.," Sept., 1876.)

PATHOLOGY, MORBID ANATOMY, AND HISTOLOGY.

The Histology of Tubercle.—A writer in the "British and Foreign Medico-Chirurgical Review" sums up the results of recent investigations on this subject.

He reminds us that the truly tubercular structure is essentially a microscopical object, and that naked eye appearances are almost valueless. A tubercle—consisting of a central multi-nucleated giant-cell, with numerous processes branching out and aiding to form a reticulum, which terminates externally in a concentric layer of fibrous tissue, the meshes being occupied by epithelioid and lymphoid cells—is more or less modified in accordance with its point of origin, site, and stage of existence. It begins with the formation of the giant-cell, which differs somewhat from the myeloid cells found in certain tumours and in bone medulla. Langhame supposes that the giant-cell may be produced in one of two ways; either by the division of a single cell or by the running together of several cells.

Klebs, Köster, and Hering consider the giant-cells to be transverse sections of capillary lymphatic vessels. Schüppel believed they were formed within blood-vessels by the running together of several colourless blood-corpuscles. Brodowski regards them as formed from the germs of newly-developing blood-vessels, owing to a superabundant proliferation of the nuclei of their vascular walls. It is probable that tubercle never arises from interstitial connective tissue, but is constantly developed from an endothelial surface.

The true miliary tubercle of the lung, found in the general tuberculosis of children, springs from the epithelium lining the alveolar cavities. Buhl considers that it is a desquamative pneumonia, differing from the ordinary form only in the presence of giant-cells. The tubercle is primarily situated within the alveolar cavity, and only involves the alveolar wall secondarily. Klein has found in two out of seven cases the air-cells distended with fibrinous material containing granules and small cells. The reviewer is inclined to look upon this so-called fibrinous material as a form of colloid.

Both catarrhal pneumonia and true miliary tubercle arise in the same way, and at an extremely early period do not much differ in structure; in both the alveolar cavities are filled with the cells resulting from epithelial germination. Differentiation soon shows itself. The former tends to degenerate, and become caseous, the alveolar walls break down, and a small phthisical cavity results. In the latter there is at first no tendency to degeneration, but a formative process ensues in which one or more of the proliferated epithelial cells enlarges, becomes granular, and produces a giant cell, from which processes are rapidly thrown out, forming a reticulum bounded by the alveolar wall. The tubercle, which is frequently produced in phthisical lungs, and found most frequently in the neighbourhood of cavities, originates in all probability within the perivascular and peribronchial lymphatics. As a general rule, when tubercle develops secondarily in an organ in the neighbourhood of a cheesy deposit, it takes origin in the endothelium of the lymphatics.

The reviewer regards the fibrous transformation spoken of by Virchow as more commonly associated with catarrhal affections than with tubercle, and, when it does occur with tubercle, he believes that the tubercle is probably secondary to the fibrous formation.

Sometimes the lung is found infiltrated with a jelly-like material, which soon becomes firmer in consistence, grey, and at last yellowish white in colour. This may be the result of degeneration of various affections of the lung, especially certain forms of catarrhal pneumonia, where it is associated with a truly tubercular deposit. Thaon describes it as a caseous colloid pneumonia.—("Medico-Chirurgical Review," April, 1877).

Malformation of the Heart.—Dr. Norman Moore records two cases of this lesion. In the first case, that of a man aged 87, the heart was greatly hypertrophied and dilated in all its chambers; the valves were normal; the aorta abruptly narrowed so as only just to admit the tip of the forefinger at the point of junction of the ductus arteriosus (which was closed). At this constriction there was a slight internal ridge, and the aorta became again of normal width beyond the ridge. The narrowness, which ultimately caused death, was doubtless congenital, and had not interfered with the duties of the man, a soldier. During life there was slight congestion of the ears, face and neck, the cardiac dulness was increased, the impulse heaving and a little irregular. A faint systolic murmur was heard over the base of the heart not specially localised; the pulse-wave was rather sudden. He complained of attacks of pain about the base of the heart. In the second case, that of a girl aged 20 years, the heart was hypertrophied, the right ventricle dilated; the tricuspid and mitral valves were fringed with vegetations; the pulmonary orifice was contracted by partial fusion of the valves; the ductus arteriosus was closed; the aorta was normal. There was an opening in the uppermost part of the ventricular septum the size of a sixpence; it had rounded muscular edges, and its upper edge was close to one of the aortic valves. During life the patient had been under observation about four years; her fingers, nose, and toes were clubbed, her breath short from birth. She was slightly cyanotic. The cardiac impulse was increased slightly, and a very loud systolic murmur could be heard, most intense at a point midway between the left base and the apex, and audible at the angle of the scapula. Occasionally there was a præsystolic murmur at the apex, and a slight thrill. Her pulse was always feeble and irregular.—("St. Bartholomew's Hospital Reports," 1876.)

Aneurism of the Heart.—Drs. Legg and Ormerod, in their report from the post mortem room, record two cases. In the first case there was an aneurism of the septum of the heart, and general atheroma, with an aneurism of the left internal iliac artery. The heart was of normal size. The coronary arteries dilated, atheromatous and tortuous; the muscular tissue of the heart was of a brown-red colour. The tricuspid valve was thickened at the edges and opaque. The left side showed no signs of acute endocarditis. The aortic and mitral valves were atheromatous, the aortic sigmoids had calcareous plates at their attachment to the aorta, and were much stiffened. At the base of the left ventricle, between two aortic valves, where the large flap of the mitral is attached, in the undefended space was a pouch about the size of half a small marble; it was nearly hemispherical, the mouth being the widest part; the diameter varied from 17 to 20 millimetres. The walls of the pouch were formed of a thin semi-transparent tissue, and crossed by bands of membrane arranged like the musculi pectinati of the right auricle. The convex surface of the pouch on the right side was formed by the attached part of the tricuspid valve, and part of the adjoining auricular wall. The pouch was not perforated, and there was no roughening or opacity of the endocardium on the left side around the pouch. The aorta was dilated and extremely atheromatous; so also were the iliac arteries. There was an aneurism the size of a walnut on the left internal iliac artery. The authors draw attention to the fact that the aneurism of the heart was evidently not preceded by endocarditis. (During life the heart's apex was displaced downwards, and to the left in the nipple line. The sounds were intermittent, and an occasional diastolic murmur was heard at the apex. When an intermission occurred, the next beat did not produce a murmur.)

The second case was one of aneurism of the mitral valve. The pericardium was adherent to the heart, posteriorly, near the apex, for a space about the size of a shilling; there were also adhesions between the superior and inferior cavæ. There were two white patches on the anterior surface of the heart. The heart was much enlarged, apparently most so on the left side. The aortic valves were incompetent. There was very slight dilatation of the tricuspid orifice. The endocardium of the auricle was studded with small vegetations over the small flap of the mitral valve. There were two bulgings on the large flap; one at the edge of the valve close to the apex, rather flattened and the size of a split pea; the other close to the first, nearer the centre, and about the size of half a hemp seed. A chorda tendinea passing to the apex of the valve had been torn loose from its attachment to the musculus papillaris; another, close to its attachment to the valve, had a spindle-shaped enlargement the size of a hemp-seed; it was hard and calcareous. There were some small granulations on the edge of the mitral valve, especially on the small flap. On the ventricular surface of the large flap were two openings leading into the substance of the valve. One was in the middle of the valve, and corresponded with the smaller bulging on the auricular surface; the opening being surrounded by vegetations the size of mustard seeds. The other opening, close to the edge of the valve, had no vegetations, and led to the larger cavity. The aortic valves were stiff and opaque, having many granulations on their margins. During life there was a loud systolic mitral murmur.—("St. Bartholomew's Hospital Reports," 1876.)

Acute Tuberculosis.—Dr. Thomas Barlow reports a case of a child, only four months old, in whose lungs grey tubercles were disseminated, and whose mediastinal glands were enlarged and softened. The symptoms had been simply those of inanition. Tuberculosis in children under twelve months old has not been regarded as of common occurrence in England.—("Brit. Med. Journ.," Oct. 28th, 1876.)

Diffuse Caseation of the Lungs, subsequent to Hæmorrhagic Pleural

Effusion.—Dr. A. W. Foot exhibited to the Pathological Society of Dublin the lungs of a man aged 27, who had been tapped three times, 159 ounces of claret-like fluid being removed. The lungs were found to present the characters of caseous pneumonia, and the left lung was adherent except at the lower lateral region, from which part the fluid had been removed.—("Dublin Journal," July, 1876.)

Morbid Histology of Human Lung.—At a meeting of the microscopical section of the Manchester Medical Society, on November 21st, 1876, Dr. James Ross exhibited a series of preparations and read a paper on this subject. Dr. Ross objects to the indiscriminate use of the phrase "cell-proliferation" as involving a theory of cell-derivation which is in some instances extremely questionable. He suggests that many of the lymphoid cells of tubercle are due to a transudation of the leucocytes through the walls of the vessels rather than to cell-proliferation." — ("Med. Times and Gaz.," December 2nd, 1876.)

Costal Cartilages in Phthisis.—Dr. Reginald Thompson states his experience as pathologist to the Brompton Hospital for consumption. He says that, contrary to the statement of Freund that ossification of the cartilages of the first ribs is usual in phthisis, the cartilages are invariably extremely soft, and during the past year there has not been a single occasion in which the saw has been necessary in opening the thorax. His experience in a large metropolitan hospital where phthisis is excluded, was that the saw had frequently to be employed, in consequence of an ossified condition of the cartilages.—("Brit. Med. Journ.," Jan. 13th, 1877.)

Excavation of the Lung in Phthisis.—Dr. R. Douglas Powell objects to the ordinary divisions of phthisis into the three stages of consolidation, softening, and excavation. The disease has a long and chequered course, marked by repeated attacks, with each of which a new portion of lung may be involved, and in each of which the three processes of consolidation, softening, and excavation may occur. The prospects of life depend, not upon the so-called stage, but upon the extent of the disease, the rapidity of its spread, and the degree of constitutional disturbance. The chief agent in pulmonary destruction is inflammation of a catarrhal kind. After croupous pneumonia the lung readily returns to its normal state, the exuded products (chiefly leucocytes) being very prone to fatty degeneration, and being easily absorbed; whereas in catarrhal pneumonia the alveolar epithelium is dense and difficult to melt down, its degeneration is slow and incomplete, it is retained in the alveoli, and sets up inflammatory processes around.—("Lancet," Jan. 6th, 1877.)

Excavation of Lung in Phthisis.—Dr. R. Douglas Powell divides cavities into four classes:—(1.) Recent cavities, *i.e.*, those yet in course of extension and enlargement, (2.) Quiescent and contracting cavities, (3.) Secreting cavities, and (4.) Active or ulcerous cavities. He comments on the means of extension and enlargement of cavities, (*a.*) By fresh solution of tissue, (*b.*) By the pressure of cough, and (*c.*) by the dilating force of inspiration. This last method, advocated by Rindfleisch, is considered by Dr. Powell to be very questionable. Even in health, inflation simply depends on expansion of the thoracic cavity, and in phthisis the inspiratory forces will be greatly less than in health; it is therefore difficult to conceive how any extra pressure should be brought to bear upon the interior of cavities by any inspiratory effort.

In the treatment of hectic (which doubtless depends on purulent absorption) the antiseptic action of salicylic acid and its soda-salt is likely to be of benefit, and these drugs are found to have some efficacy in reducing the temperature in the hectic of advanced phthisis. —("Lancet," Jan. 27th, 1877.

Dr. Douglas Powell further remarks as follows :—

As regards prognosis, then, in cases of phthisis in which cavity has formed, the signs of shrinking of one lung—flattening, lessened mobility, uncovering of heart, and increased hardness of percussion, associated with signs of enlargement of the opposite lung—resonance encroaching upon the median line, and tending to obscure the heart's dulness on that side, may be taken as sure evidence of chronicity, and of a tendency to arrest. If with the enlargement of the comparatively sound lung we get increasingly good breath-sound, the case is in the best way to amendment. These physical signs come on very insidiously, although they often make rapid progress when once the case has become fairly quiescent. — ("Lancet," April 14th, 1877.)

Visceral Syphilis (Discussion at the Pathological Society of London). —Dr. Goodhart directed attention to the association of syphilis with fibroid changes in the lungs of thirty-six cases of chronic lung-disease selected from 177 cases of visceral syphilis; twenty-four presented changes indicative of fibroid phthisis; the other twelve presented no features which would distinguish them from ordinary tubercular phthisis. With this large proportion of fibroid disease, out of all the cases of chronic lung-disease which had occurred in syphilis, there can be very little doubt that syphilis and fibrous change go together in the lung as they do elsewhere.

Dr. Green exhibited a specimen of syphilitic disease of the lung. The mode of origin of the tissue in the lung seemed to be peculiar; in all cases of syphilitic disease it appeared to originate in the interlobular septa. Probably it began there, around the vessels specially, and thus it could be distinguished from all other chronic fibroid changes. In phthisis the fibroid disease was secondary to change in the alveoli and their walls; in chronic pneumonia also, in most cases, the process commenced in the alveolar walls; whilst in chronic bronchitis a fibroid thickening proceeded from the bronchi. As far, therefore, as histology teaches, the fact that the disease originates around the interlobular vessels, and not in the alveolar walls, may be taken as the strongest evidence of its syphilitic character.

Dr. Pye-Smith exhibited the lungs from a man 42 years of age, affected with a chronic interstitial pneumonia which was manifestly syphilitic.

Dr. Wilson Fox, in analysing the cases recorded, found that several varieties of syphilitic disease of the lung had been described:—(1.) There was the gumma; (2.) In Dr. Greenfield's specimen he recognised the epithelial origin of the disease; (3.) The fibroid specimens. He advised caution in assuming that any condition of lung, other than the gumma, was really of syphilitic origin.

Dr. Mahomed showed a specimen in which death occurred in a syphilitic subject by ulceration of the aorta. He believed that atheroma is more common in syphilitics, but that it is not specific.—("Brit. Med. Journ.," Feb. 10th and March 3rd, 1877.)

Syphilitic Disease of the Lung.—In commenting on the discussion at the Pathological Society of London, a writer in the "Lancet" inquires, what are the forms of syphilitic lung disease as to which there is little or no doubt? Firstly, there are certain well-authenticated cases in which a gummatous infiltration or growth in the thoracic wall, commencing in muscle or periosteum, has invaded, first the pleura and then the lung, penetrating to a certain depth into its substance. Secondly, there are cases in which there is syphilitic disease of the larynx and trachea, extending downwards along the bronchi and their divisions, and then entering the lung, producing, probably, more or less affection of the alveolar structure. Thirdly, there are well-authenticated cases of gummata of large size in the lung. Fourthly, there is the disease of lung peculiar to infancy, named by Virchow and F. Weber "white hepatisation." This change consists in a diffuse syphilitic growth of highly vascular character, commencing in the peribronchial or perivascular fibrous tissue, and thence invading the alveolar septa, gradually obliterating the alveoli.

On the question of a syphilitic phthisis, the writer argues that we can expect no decisive result until there is a more general agreement as to what minute changes are to be regarded as due to syphilis; and he urges those who have opportunity to devote special attention to the changes in the lungs in early syphilis before the processes are so far advanced as to be complicated by fibroid and catarrhal changes. —("Lancet," March 10th, 1877.)

Syphilitic Phthisis.—Dr. F. Robinson recognises two forms of lung affection of syphilitic origin.

In the first and less frequent form the greater part of the organ is affected; the disease appears primarily at the base, and thence extends through the whole lung to the apex. The other and more common class is that in which the complaint is limited to one or both apices.

The former condition has few, if any, points of difference from ordinary chronic pneumonia, and recovery is generally complete.

The latter condition simulates ordinary chronic tuberculosis in the first stage, affecting one or both apices; close investigation will indicate some points of divergence as follows:—

(*a.*) The physique. The ordinary characteristics of a phthisical subject are wanting. The chest is well developed, and the body fairly nourished.

(*b.*) The absence of constitutional irritation of a severe character.

(*c.*) The dulness on percussion is less pronounced and less definable in extent. It more frequently affects both apices, and simultaneously.

(*d.*) The characteristics of tubercular sputa in the earliest stage are wanting.

The chronicity—stationary condition—of both forms of syphilitic lung disease, together with the absence of prominent and distressing constitutional symptoms, are noticeable features, which tend to aid the diagnosis.

The treatment found to be most efficacious has been a combination of cod liver oil with iron in various forms, particularly the iodide, iodide of potassium, mild counter-irritation by iodine, wine, and a liberal diet.—("Lancet," May 5th, 1877.)

Syphilitic Phthisis.—Dr. MacSwiney, at a meeting of the Medical Society of the College of Physicians of Ireland, detailed a case of a man aged 36, which was concluded to be one of syphilitic phthisis from—(1.) The medical history. (2.) The absence of any hereditary predisposition to ordinary phthisis. (3.) The progressive extension of the syphilitic disease from its outset, through its various stages, to its ultimate full development. (4.) The special cachexia by which the symptoms were accompanied, together with the combination of the lung-affection with other specific morbid phenomena. (5.) The stage of the specific disease, viz., the tertiary, at which the pulmonary attack set in; (6.) The good effects of a short course of anti-syphilitic treatment.—("Brit. Med. Journ.," Dec. 9th, 1876.)

Pulmonary Hæmorrhage.—Mr. Cullingworth, at a meeting of the Manchester Medical Society, related a case of sudden death from pulmonary hæmorrhage in a lady, aged 52. The heart was found to have undergone considerable fatty degeneration, and the hæmorrhage was accounted for by the supposition that the coats of the bronchial and pulmonary capillaries had undergone fatty changes similar to those in the heart.—("Brit. Med. Journ.," Dec. 9th, 1876.)

Diphtheria and Croup.—Sir John Rose Cormack, in some comments on the queries issued by the committee of the Royal Medical and Chirurgical Society, to enquire into the relations of membranous croup and diphtheria, attempts to answer the question, What is croup? He comes to the conclusion that—

Diphtheria is, and croup is not, a disease. The latter is only a word—a word which originally meant stridulous breathing, a symptom of laryngismus stridulus, laryngitis stridulosa, laryngo-tracheal diphtheria, and some other affections—a word which, in different countries, has drifted into different meanings—a word currently applied by British authors to diseases essentially distinct in their pathology—a word, therefore, which, from the confusion it occasions in British and international literature, ought to be removed from medical nomenclature. It is not necessary to find a substitute for the word croup, all the various diseases which it embraces having already their own appropriate and separate names in all languages.– ("Edinb. Med. Journ.," Sept., 1876.)

In a subsequent note, Sir John Rose Cormack directs attention to the signification of the word croup, as used by French authorities. He says—

"Croup is the term generally employed in the writings of French physicians, and in their daily intercourse with one another, and with their patients, to designate diphtheria manifesting itself in the air-passages." It is necessary to bear in mind that the facts and opinions given from French sources by most English writers, regarding croup, are facts and opinions regarding diphtheria affecting the air-passages, and are misleading when applied to the condition which is spoken of as croup in the English language. Most English authors on croup and diphtheria have evidently been unaware of the meaning attached in France to the word croup, and therefore most of the discussions in English books on this subject require to be re-written.—("Edinb. Med. Journ.," Nov., 1876.)

Croup and Diphtheria.—Dr. Sansom, at a meeting of the Medical Society of London, reported two cases. In one of these (a child, aged 3½ years) tracheal croup threatened death from apnœa: tracheotomy gave immediate relief, and although the trachea was subsequently choked with false membrane, the child ultimately recovered. This result was considered to be partially due to the use of a ten per cent. hot solution of liquor potassæ, which was sprayed through the tracheal tube to further the detachment of the obstructing membrane. The other case was one of pharyngo-laryngeal diphtheria in a child 4½ years of age; tracheotomy gave temporary relief, but diphtheritic membrane appeared in the wound in the neck, on the lips, and also in a wound of the finger; this was accompanied by profound adynamia, and followed by pneumonia and death.

An animated discussion followed the reading of Dr. Sansom's cases in which various opinions as to the identity or non-identity of croup and diphtheria were expressed.—("Lancet," Nov. 4th, 1876.)

Croup and Diphtheria.—Dr. E. Headlam Greenhow, in a clinical lecture on two cases of laryngeal disease, sums up what he considers to be the essential difference between these two diseases as follows:—

Diphtheria is a specific febrile disease, characterised by—

(1.) Considerable, sometimes excessive, prostration.

(2.) Sore-throat, often difficulty of swallowing, usually preceding by some days the laryngeal symptoms, but no hoarseness of voice till stridulous breathing and cough supervene.

(3.) Injection and swelling of the fauces, which are more or less extensively covered with exudation.

(4.) Swelling of the glands at the angles of the lower jaw.

(5.) Presence of albuminuria or epistaxis in many cases.

Croup is a local catarrhal inflammation, in which—

(1.) There is little, and sometimes no, prostration.

(2.) Catarrh and hoarseness of voice precede, for a longer or shorter time, the urgent laryngeal symptoms; but as a rule there is no sore-throat or difficulty of swallowing, though patients often complain of pain in the trachea.

(3.) Shrill cough of metallic tone and stridulous breathing are early symptoms.

(4.) The fauces may be injected, as they usually are in common catarrh; but they are not much, if at all, swollen, and there is no exudation upon them.

(5.) Swelling of the submaxillary glands, albuminuria, and epistaxis do not occur.

The last, but most important, point of difference between croup and diphtheria is that the constitutional treatment of the two diseases is totally opposite.—("Med. Times and Gaz.," Jan. 6th, 1877.)

Diphtheria.—At a meeting of the Dublin Obstetrical Society, Dr. Henry Kennedy reviewed the diphtheria and croup controversy, and summed up his own views as follows:—

(1.) That diphtheria begins in the throat, and from this may spread downwards, so as to involve the larynx; whilst Cheyne's croup either commences in the larynx, or as bronchitis, and then spreads upwards to the larynx.

(2.) That diphtheria is essentially a constitutional affection, whilst there are no grounds for supposing that croup is so.

(3.) That whilst the fever of croup is very commonly sthenic or inflammatory, that attendant on diphtheria is in a very marked degree asthenic.

(4.) That the treatment of the two affections is in consequence essentially different.

(5.) That diphtheria very generally exhibits some enlargement of a gland or glands in the neck—a state not observed in croup.

(6.) That the progress of the two affections towards a fatal result affords a very marked contrast the one to the other.

(7.) That there are no grounds whatever for supposing Cheyne's croup to be contagious, whilst there are the strongest for supposing diphtheria to be so.—("Dublin Med. Journ.," Feb., 1877.)

Dr. Walter Beeby, in a paper read before the South-Eastern Branch of the British Medical Association, gives an account of an epidemic of diphtheria at Bromley. Out of ninety-three cases at Bromley, and fifty-four at Riddenden, the mortality was in each place about one-fourth. In seventy-nine at Bromley, whose ages were stated, the largest number attacked were at 2, 3, 6, 7, and 8 years old, whereas the greatest mortality was at 1, 2, 3, and 5 years. No death occurred over the age of 11.—("Brit. Med. Journ.," April 28th, 1877.)

Dr. William Yeats describes the principal phenomena of an outbreak of diphtheria in Auchtergaven, Perthshire, and he concludes that membranous croup and laryngeal diphtheria are identical, and that idiopathic croup, properly so called, consists of two varieties, viz., the spasmodic non-inflammatory, and the simple catarrhal. The membranous form, hitherto called idiopathic, he considers to be specific.—("Edinb. Med. Journ.," July, 1876.)

Dilatation of the Pulmonary Capillaries.—Dr. J. B. Berkart describes a condition of varicose dilatation of the pulmonary capillaries, giving rise to a pneumonia of the upper lobe, small portions of which had become necrotic, the process being analogous to that which takes place in the lower extremities under similar conditions.—("Brit. Med. Journ.," Sept. 2nd, 1876.)

A Mutton Bone in a Bronchus Causing Gangrene of Lung and Simulating Phthisis.—At a meeting of the Glasgow Pathological and Clinical Society, Dr. Joseph Coats exhibited a piece of bone which had been impacted in the left bronchus for seventeen months, and had caused death by gangrene of the lung.—("Brit. Med. Journ.," Sept. 16th, 1876.)

Primary Cancer of the Pleura.—Dr. Campbell reports a case which occurred in the Cardiff Infirmary. A man, aged 40, who had chest symptoms for four months, was found to have no voice or breath-sounds, with percussion dulness over the whole of the left side: a hard round tumour was observed under the free border of the left pectoralis major. After death this tumour was found to start from the pleura: it and the thickened pleura presented microscopically the characters of well-marked scirrhus.—("Brit. Med. Journ.," Sept. 16th, 1876.)

Intrathoracic Tumour.—Dr. J. Magee Finny reports a rare case of lympho-sarcomatous tumour, extra- as well as intra-thoracic, involving in its growth the muscles overlying the sternum and three upper ribs, as well as the vessels and structures in the anterior mediastinum, and the sternum itself. The patient, a female servant, was 30 years of age.

Reduplication of *both sounds* of the heart was noticeable at times: the natural sounds were clearly defined, and with the systolic the pulse coincided, but, instantly after these sounds, two others were heard of unequal length, resembling an echo of the two first, but not accompanied by a pulse. There was no reduplication of the heart's impulse.

The patient's symptoms were for the most part similar to those usually associated with aneurism. — ("Dublin Med. Journ.," April, 1877.)

Intrathoracic Tumour. — Lympho-sarcoma. — Dr. Byrom Bramwell reports an interesting case of mediastinal lymphoid growth, occurring in a man, aged 30, which caused death in twelve months from the commencement of his symptoms. At the autopsy it was found that a secondary growth had invaded the left supra-renal capsule, indicating the close physiological relation which exists between the supra-renal bodies and the lymphatic glandular system.—("Brit. Med. Journ.," January 6th, 1877.)

Dr. Walter Smith describes the case of a man, aged 45, who had complained of chest symptoms for six months. A large intra-thoracic neoplastic growth of lymphoid character was found at the autopsy.—("Dublin Med. Journ.," Feb., 1877.)

Primary Cancer of the Lungs.—Dr. A. McAldowie reports a case occurring in a child five and a-half months old. Both lungs were studded with nodules, the largest being about half an inch in diameter.—("Lancet," Oct. 21st, 1876.)

Thoracic Tumour.—Dr. Finny, at a meeting of the Pathological Society of Dublin, exhibited specimens from a woman, aged 22, who died from a condition simulating aortic aneurism. On opening the thorax it was found that a large mass of glands in the mediastinum had given rise to all the symptoms observed.—("Dublin Med. Journ.," Nov., 1876.)

Adherent Pericardium.—Dr. R. S. Archer, reports a case of a soldier, aged 36, of intemperate habits, who had formerly suffered from acute rheumatism, in whom adhesion of the pericardium was diagnosed without difficulty. The intercostal space at the region of the apex-beat was retracted during the cardiac systole, and bulged out during the diastole. Post mortem, the pericardial sac was found to be totally obliterated, its parietal and visceral layers being firmly and universally adherent, and the muscular structure of the heart was soft, friable and pale-coloured from degeneration.—("Dublin Med. Journ.," Oct., 1876.)

Recovery from Pyopericardium.—M. Gould exhibited to the Pathological Society of London some specimens from a man who had recovered from suppuration in the pericardium, but who died from cancer of the liver. A chalky mass was found at one part of the pericardium, and at the back the two layers were united, forming a calcareous plate. The ventricles were hypertrophied, but the valves were healthy.—("Brit. Med. Journ.," Dec. 23rd, 1876.)

Suppurative Inflammation of the Mediastinum.—Dr. Goodhart, at a meeting of the Pathological Society of London, related details of two cases of this kind.—("Brit. Med. Journ.," Nov. 25th, 1876.)

Clot in the Left Auricle.—Dr. Moxon exhibited, at a meeting of the Pathological Society of London, a fresh specimen of large clot in the left auricle. There was a presystolic murmur during life, a continuous diastolic murmur, resembling in character a bruit-de-diable. There was a tight stenosis of the mitral orifice, and a large ante mortem clot, so that the auricle could not contract. The murmur therefore could not be caused by contraction of the auricle, but must have arisen from the influx of the blood from the pulmonary vessels. —("Brit. Med. Journ.," Nov. 25th, 1876.)

Clot in the Left Ventricle.—Dr. E. Symes Thompson, at a meeting of the Harveian Society of London, related a case of large clot in the left venticle of a man who had cavities in each lung. He fell out of bed; paralysis of the left side followed, and subsequently death. The heart, together with the clot, weighed sixteen ounces. An embolus was found in the carotid, blocking up the middle cerebral artery.—("Brit. Med. Journ.," Nov. 25th, 1877.)

Cardiac Thrombosis.—Dr. G. W. Balfour relates a case in which the administration of digitalis to a patient with dilated heart produced a perfect shower of pulmonary emboli; whenever the cardiac force increased some fresh embolus at once appeared. For several days before death a peculiar feature was noticed; the two sides of the heart were found to pulsate separately, the radial and carotid pulse being forty and the jugular eighty.—("Edinb. Med. Journ.," June, 1876.)

Inflammatory Growth in the Left Auricle.—Dr. Dreschfeld, at a meeting of the Manchester Medical Society, showed a heart with a peculiar tuft-like, inflammatory formation in the posterior wall of the left auricle. Some of the mitral chordæ tendineæ were ruptured, and the periodical flapping back of the free ends had set up a local endocarditis, which had given rise to the deposition of a mass of fibrine.—("Brit. Med. Journ.," Dec. 9th, 1876.)

Thoracic Aneurism.—Mr. T. M. Dolan reports three cases of aneurism. In one case the tumour presented anteriorly, and ultimately gave rise to death from repeated hæmorrhages in consequence of the giving way of the skin. In the second case the tumour gave way internally, but no external hæmorrhage took place. In the third the tumour pressed on, and ultimately gave way into the œsophagus.—("Med. Times and Gaz.," March 17th, 1877.)

Dr. G. W. Balfour, at a meeting of the Medico-Chirurgical Society of Edinburgh, exhibited an aneurism coming off from the ascending aorta and rendering the valves incompetent. The patient had been much benefited on several occasions by the use of iodide of potassium in full doses, and the specimen well illustrated the mode of action of the drug. The condition observed afforded pretty strong proof that clot-formation is not the efficient agent in producing relief. The adventitia was found to be considerably hypertrophied, and this is believed by Dr. Balfour to be the peculiar effect of the iodide of potassium; the drug also diminishes the blood-pressure by acting as a sedative to the heart's action.—("Edinb. Med. Journ.," June, 1876.)

Dr. Moore reported to the Dublin Pathological Society a case in which many of the physical signs of aneurism were wanting The patient, aged 67, had complained for two months of difficulty in breathing, and cough; two days after admission to hospital he became suddenly worse, and died in a few hours. After death it was found that the arch of the aorta had become dilated into an enormous aneurismal sac, which had caused considerable compression of the trachea, and consequently collapse of the left lung, with copious effusion into the left pleura resulting from the collapse—a hydrothorax è vacuo.—("Dublin Med. Journ.," Nov., 1876.)

Dr. Hayden exhibited to the Pathological Society of Dublin the viscera of a man who had died suddenly from intra-thoracic aneurism.' The posterior mediastinum was occupied by firm laminated clots, a large opening existed in the diaphragm, and several pounds of blood, partly liquid, were found in the peritoneal cavity.—("Dublin Med. Journ.," Feb., 1877.)

Aneurism from Embolism.—At a meeting of the Pathological Society of London, Dr. Goodhart read notes of three cases of aneurism arising from embolism. The patients were 18, 34, and 19 years of age. Apoplexy in young subjects is generally the result of embolism. It seems probable that the clot behind the plug softens, sets up softening of the wall of the vessel, and thence aneurism.

Mr. Bryant also brought forward cases of aneurism arising from embolism in the femoral and popliteal arteries. The ages of the patients were 29 and 33 respectively. Dr. Wilkes considered that these cases clearly proved the dependence of aneurism on emboli, and he believed that this result is especially likely to occur in the case of young people suffering from endocarditis.—("Brit. Med. Journ.," March 24th, 1877.)

Aneurism of the Pulmonary Artery.—Dr. Finlayson reports from the

Glasgow Western Infirmary a case in which two aneurisms of a pulmonary artery were found within a phthisical cavity; frequent and severe attacks of hæmoptysis had occurred, one attack immediately preceded death; the quantity of blood coughed up amounted on several occasions to as much as thirty or forty ounces. The patient was only 21 years of age.—("Brit. Med. Journ.," April 28th, 1877.)

Dr. Kendal Franks exhibited, before the Pathological Society of Dublin, the heart and lungs of a young man who died suddenly from pulmonary hæmorrhage. The immediate cause of death was the bursting of a pulmonary aneurism into a phthisical cavity. The lung-symptoms had commenced five years previously with severe hæmoptysis.—("Dublin Med. Journ.," July, 1876.)

Aneurism of a Coronary Artery.—Dr. Irvine exhibited to the Pathological Society of London a specimen from a man, aged 47, who had died suddenly after only a few hours' illness. The temperature before death was 104°. The pericardium was found to contain eight or ten ounces of fluid and clot. There were vegetations on the aortic valves, and ulceration had taken place around the opening of one of the coronary arteries; at this spot an aneurism had formed, and had given way into the pericardium. The rise in temperature was believed to be due to the hæmorrhage into the pericardium.—("Brit. Med. Journ.," April 21st, 1877.)

Hæmorrhage into the Pericardium.—Surgeon-Major Jackson, C.B., exhibited to the Pathological Society of Dublin a specimen of aortic aneurism fatal by hæmorrhage into the pericardium. The patient was 29 years of age.—("Dublin Med. Journ.," April, 1877.)

Rupture of the Aorta.—Dr. M'Dowall describes a case of spontaneous circular rupture of the aorta occurring in a demented patient, 42 years of age.—("Edinb. Med. Journ.," Oct., 1876.)

Aneurism of the Aorta.—Dr. Hayden, at a meeting of the Pathological Society of Dublin, exhibited a specimen of true aneurism, the result of alcoholic poisoning (?) followed by various structural changes in the heart and aorta.—("Dublin Journ. of Med. Science," Oct., 1876.)

Aortic Disease—"Cor Bovinum."—Dr. J. W. Moore exhibited a heart, weighing 33½ ounces. There was an aneurism just above the aortic valves, and aortic regurgitation existed during life.—("Dublin Journ. of Med. Science," Oct., 1876.)

Aortic Disease.—Dr. James Barr describes a case of dilated hypertrophy of the left ventricle, with obstructive and regurgitant aortic murmurs, in which the sphygmographic tracings showed a peculiar double ventricular systole. Two, and sometimes three, vibrations were present in the upstroke of the curve, in place of the vertical percussion wave of an ordinary systole. The down-stroke was one uniform curve, and was perfectly characteristic of considerable aortic regurgitation.—("Dublin Med. Journ.," Nov., 1876.)

Ossification or Calcification of the Heart.—Mr. R. W. Egan reports a case of sudden death in a man aged 21, whose heart was found to weigh seventeen ounces, the walls being infiltrated and partially covered with a quantity of hard white concrete deposit. The posterior part of the left ventricle was almost converted into a solid bony calcareous mass, and the inter-ventricular septum was in a similar condition. There had been no history of previous illness. Three brothers had died at about the same age and suddenly. The parents are living and healthy.—("Brit. Med. Journ.," Dec. 9th, 1876.)

Hypertrophy of the Vascular System.—Dr. R. Saundby describes the abnormalities presented in the vascular system of the bodies of persons whose kidneys present the appearances of advanced cirrhosis. They are—

(1.) Dilatation and hypertrophy of the heart.

(2.) Dilatation and chronic endoarteritis of the great vessels.

(3.) Hypertrophy of the muscular walls of the small arteries with thickening and dilatation of their perivascular sheaths. It is well established that increased vascular tension is one of the earliest phenomena of the disease, and we have those conditions present which are likely to favour increased fulness of the vascular system. Clinical facts seem to warrant the conclusion that the hypertrophy of the muscular wall of the heart and arterioles is directly due to the increased fulness of the vascular system, and this condition will also account satisfactorily for the thickening of the perivascular sheaths and the formation of connective-tissue in the body generally.—("Edinb. Med. Journ.," Oct., 1876.)

Sclerema attended by Cardiac Disturbance.—At a meeting of the Royal Medical and Chirurgical Society, Dr. John Harley reported a case of slowly advancing sclerema, attended by cardiac and gastric disorders. He considered the sclerema to be the direct result of atrophy of the blood-vessels, and of the lacunæ and canaliculi of the connective tissue, converting the soft, moist, open, and well-nourished network into a hard, comparatively dry, close, and ill-nourished tendinous tissue. This atrophy he believed to be due to depression of vaso-motor nerve-power, and that the functional disturbance of the heart and stomach were due to the same cause—that the case was one of slowly advancing paralysis of the sympathetic system generally, and that the affection was manifested at the periphery by the atrophy of the connective-tissue, and nearer the centre by the grave disturbances of the circulating and digestive functions.—("Brit. Med. Journ.," Jan. 27th, 1877.)

Endoarteritis Chronica Deformans, and its Relation to Rupture of the

Heart.—Dr. John Stevenson (Forfar) reports a case in which death took place from hæmorrhage into the pericardium, following rupture of the heart, the rupture having resulted from mal-nutrition consequent on disease in the coronary artery. An atheromatous swelling, about one-eighth part of an inch in length, projected into the vessel so as almost to occlude it, and the place where the rupture occurred would correspond to the distribution of this vessel.—("Edinb. Med. Journ.," Sept., 1876.)

Stenosis of the Pulmonary Artery, Patent Foramen Ovale.—Dr. Galton exhibited to the South-Eastern Branch of the British Medical Association a patient, aged 14, well developed, but with livid lips and clubbed fingers, also slightly pigeon-breasted. The boy was a twin, the other had presented signs of lividity at birth, and died at 15 months from a bronchial attack. The surviving boy had suffered from dyspnœa all his life, and was 3½ years old before he walked. There was a loud systolic bruit over the præcordia, most marked to the left of the sternum, between the sixth and seventh costal cartilages.—("Brit. Med. Journ.," April 7th, 1877.)

Renal Asthma.—Dr. George Johnson, in his "Lumleian Lectures on the Muscular Arterioles," discusses the cause of the dyspnœa frequently associated with the uræmic condition. He believes that the paroxysmal dyspnœa of Bright's disease may be, in part at least, explained by an interrupted circulation through the pulmonary capillaries occasioned by spasm of the pulmonary arterioles, which are stimulated to this excessive contraction by the influence of the impure blood upon the vaso-motor nerves and centre.—("Brit. Med. Journ.," May 5th, 1877.)

CLINICAL MEDICINE.

A Cold and its Cure.—Mr. Jukes Styrap strongly advises a method of treatment which he has carried out for twenty years with considerable success. There are two methods of accomplishing the wished-for effect; first, the direct application of heat to the surface of the body by immersion in a warm bath or the hot-air bath; and second, the action of certain diaphoretic medicines; in most cases the latter only is necessary. Small doses of morphia and antimony given every three or four hours will cause the sneezing and nasal defluxion to cease after the third or fourth dose has been taken.

The following formula is recommended:—

℞ Liq. morphia (P. B.)	♏ xl.
Vini antimon.	♏xxx.
Potassæ citratis	grs. lxxx.
Syrup. aurantii	ʒ iij.
Aquæ	ad ℥ iv.

M. Ft. Mist: Two table-spoonfuls to be taken every three or four hours.—("Brit. Med. Journ.," Dec. 9th, 1876.)

Cold and its Cure.—Mr. W. J. Haram Wood comments on the treatment of colds by morphia and antimony, and points out the necessity for keeping the patient confined to the house for a few days. This constitutes such an objection to the method that he prefers to adopt the "dry plan," as suggested by Dr. C. J. B. Williams, which plan he finds to be eminently successful, and does not necessitate any cessation from one's usual daily occupation. One important advantage of the dry method is that it rarely leaves even a trace of bronchial irritation or cough. The following instructions are given:—

(1.) Begin with a sharp aperient in the solid form of pills, swallowing them with as little water as possible.

(2.) The food should be rather less in quantity and more digestible than usual, and at first should be dry; later on, the moister forms of food are more easily swallowed and digested.

(3.) As much exercise as possible should be taken, in warm clothing, to promote the action of the skin and bowels.

It will be found that twenty-four hours of the dry treatment give immense relief; thirty-six or forty-eight hours effect a cure; and sixty hours make it sure and certain.—("Brit. Med. Journ.," Dec. 23rd, 1876.)

"A Subscriber" to the "British Medical Journal" (Feb. 17th, 1877), writes to the effect that he has found marked benefit from tincture of belladonna in the most severe attacks of coryza. He recommends one dose of twenty minims at about six o'clock in the evening; this will stop nearly all the most distressing symptoms, especially the frequent desire to sneeze. Another dose of ten or fifteen minims at bedtime will generally have the effect of all but completing the cure.

Snuff for Catarrh.—Dr. Neall recalls attention to a simple and pleasant snuff, many years since recommended by Dr. Brown-Séquard, viz., finely-powdered white sugar. This application is efficacious not only in ordinary catarrh, but also in that form produced by iodide of potassium.—("Med. Times and Gaz.," Sept. 22nd, 1876.)

Sneezing.—Dr. Robert Barnes states that he has seen instances of periodical fits of sneezing occurring during pregnancy in subjects quite free from colds, and not liable to similar attacks at other times. These attacks occurred in the morning, and served to replace the morning sickness.—("Brit. Med. Journ.," Dec. 9th, 1876.)

Treatment of Croup.—Dr. J. J. Higgins (New York) writes on this subject, that the indications in reference thereto may be divided into special and general.

The general indications include the restoration of the various functions of the system and the abatement of fever—a sufficient but not sthenic support—the exhibition of diluents to encourage secretion, as also for the same purpose the respiration of a humid atmosphere, and the rendering of the blood alkaline to counteract the tendency to the formation of fibrin.

The special indications are as follows—

(1.) The relief of spasm. For this purpose emetics are to be recommended in all varieties of the disease, and constitute a measure never to be neglected. The best form of emetic, the most speedy and effectual, is turpeth mineral (hydrarg. sulphas flava) in doses of three grains for children of from one to three years of age. In severe cases the emetic should be repeated once in six or eight hours.

(2.) Relief to the congestion of the parts, by the promotion of their natural secretions.

(3.) Reduction of the inflammation, by reason of which the false membrane is being produced.

These ends are brought about by the administration of aconite.

(4.) The dissolution and expulsion of the membrane. This is met in part by the use of emetics, but as a further means for this purpose the use of mercury is advised.

In addition to such a course of medication as here outlined, counter-irritation is likely to be of service.—("The Practitioner," May, 1877.)

Diphtheria and Croup.—A writer on the subject of tracheotomy in these diseases, thinks it ought to be regarded as a rule that the physician should advise, and the surgeon encourage, the performance of tracheotomy when it is seen that medical treatment alone is clearly failing. The time at which the operation ought to be performed is when the voice is extinct, and the difficulty of respiration continues and increases, when the skin is becoming livid, the extremities are cold, and the anterior thoracic wall, especially the lower end of the sternum, sinks in on inspiration. The existence of lung-congestion is no real contra-indication, for its relief is facilitated by the increased freedom of breathing after tracheotomy. The presence of false membrane does not contra-indicate the operation, for the membrane may be sometimes removed by the surgeon, and it is sometimes expelled by the patient through the wound in the neck. Of eighty-nine cases in which tracheotomy was performed for unmistakable croup and diphtheria, thirty-six recovered and fifty-three died.—("Med. Times and Gaz.," Nov. 25th, 1876.)

Croup.—Dr. Richard Ryan (Bailyborough) reports two cases occurring in the same family at the same time. The one case, a boy, aged 3 years, recovered after the performance of tracheotomy on the third day; the other, a girl, aged fifteen months, recovered after thirteen days without tracheotomy.—("Dublin Med. Journ.," Dec., 1876.)

Mr. T. James reports from the Middlesex Hospital two cases of membranous croup in which tracheotomy was followed by complete recovery. The one, a child 3 years of age, under the care of Dr. Liveing; the other, 4 years of age, under the care of Dr. Cayley. In both cases a quantity of bloody mucus and membrane was expelled through the wound.—("Med. Times and Gaz.," Nov. 25th, 1876.)

Tracheotomy performed four times within a few years upon the same Patient.—Mr. Pugin Thornton reported to the Clinical Society this case of syphilitic laryngitis. A remarkable feature was, that the skin of the patient's face presented a discoloration very similar to that resulting from nitrate of silver; this discoloration was believed to be due to the non-recovery of the cutaneous vessels after former imperfect aëration of the blood.—("Brit. Med. Journ.," Feb. 17th, 1877.)

Flexible Tracheotomy Tubes.—Mr. W. Morrant Baker, at a meeting of the Royal Medical and Chirurgical Society, advocated the use of flexible tubes, constructed of vulcanised red india-rubber.—("Brit. Med. Journ.," Dec. 2nd, 1876.)

Pathology and Treatment of Pneumonia.—A writer in the "British and Foreign Medico-Chirurgical Review," after giving an outline of the views of two recent writers on pneumonia, Sturges and Jürgensen, remarks that the discrepancies in the practice of two physicians, otherwise so much at one as to the essential nature of the disease, show how little dependence can be placed on pathology as a guide to treatment, even in a disease so apparently simple in its character as pneumonia; and he has therefore the less reason to regret that he cannot accept the pathology promulgated by them.

It is singular how entirely, in these works, we lose sight of those microscopic observations, which, not so long since, were held to have settled the pathology of inflammations generally, and pneumonia in particular, most satisfactorily:—the constriction of the arterioles, following a local injury; succeeded by stasis inducing a condition of the tissues more or less akin to death; a behaviour of the blood in these vessels as if it were in contact with inert matter; the subsequent exudation of the liquor sanguinis; and quite recently added to these the immigration of the white corpuscles.

It is curious also how completely the observations of Wucherer, Varrentrap, and Baumgärtner are lost sight of, as to the use of chloroform in pneumonia, supplemented as these are by the successful employment in modern times of its more manageable analogue chloral, which were held to owe their efficacy to the readiness with which they were able to check those nervous reactions upon which the origin and spread of inflammation were believed to depend. Remembering all this, and how manageable chloral is when properly administered, it is strange to find Sturges stigmatising it as "too uncertain to be trusted," and asserting that to seek to abolish pain by its use in the early stage of pneumonia is "to prefer present comfort to future safety." The writer ventures to think that Sturges has yet as much to learn as to the use of chloral in pneumonia as Jürgensen evidently has as to the use of digitalis, in spite of all that has been recently written regarding it; and he predicts that a judicious use of these drugs will be found more efficacious in the relief of the symptoms in pneumonia, and not less conducive to recovery from it, than most of those remedies of which more has been heard in recent days.—("Brit. and For. Med. Chir. Rev.," No. 117, Jan. 1877.)

Dr. George Johnson, commenting on three cases of pneumonia, points out the occasional utility of local abstraction of blood by leeches and of venæsection.—("Lancet," Jan. 6th and 13th, 1877.)

Quinsy.—Dr. Atkinson read to the Thames Valley Branch of the British Medical Association a paper on quinsy. He believes the disease to be both an hereditary and a constitutional one, the predisposing cause being the strumous diathesis, the exciting cause a want of tone in the system generally, such as is produced by excess of mental or bodily exertion, long continued fasts, and chronic dyspepsia. He is not able to connect the attacks with exposure to cold. He advises bicarbonate of potash with tincture of guaiacum to be given internally, and a weak iodine gargle locally; port wine to six ounces daily is to be given.—("Brit. Med. Journ.," Dec. 30th, 1876.)

Spasmodic Stricture of the Œsophagus.—Dr. Morell Mackenzie points out the frequent association of œsophageal spasm with hysteria, particularly in young and delicate girls of the upper classes, its tendency to attack middle-aged women, who are in the habit of eructating wind, its dependence sometimes on a rheumatic affection of the œsophageal muscles, its excitation by means of irritation within the tube, and its occurrence by reflex agencies as a result of intestinal or uterine irritation. An important point as regards diagnosis is the fact that the site of obstruction may be heard to vary by means of auscultation. All difficulty in passing a bougie is at once removed if the patient be placed under the influence of ether. The globus hystericus is probably nothing more nor less than a passing spasm of the œsophagus. As regards local treatment, much can be done with the continuous current.—("Med. Times and Gaz.," Oct. 21st, 1876.)

Paralysis of the Œsophagus.—Dr. Morell Mackenzie, in a lecture on this subject, points out the utility of auscultation as an aid to diagnosis. The normal œsophageal sound is greatly altered or altogether lost, and the whole act is greatly lengthened. In extreme cases there is no longer any sound like that of a defined body of fluid passing downwards, and all that is heard is the rush of a long and more or less thin stream. This downward rush will be much more audible if the pharynx does not participate in the lesion, the bolus being then thrust with greater force into the œsophagus; and, on listening with the unaided ear, there will be heard what has been designated as "deglutitio sonora." If the pharynx is paralysed there will be wanting the loud gurgle or glou-glou, which is heard here in health, but the œsophageal sound will be stronger. The confused gurgling noise of paralysis will be replaced by a sharp click, sometimes in one part, sometimes in another, in cases of spasm of the œsophagus. In paralysis dysphagia is constant, in spasm it varies; in the former there is no regurgitation, in spasm this symptom is often very marked. The most important element of treatment is Faradism, applied by means of the œsophageal rheophore.—("Med. Times and Gaz.," Nov. 18th, 1876.)

Suffocative Goître.—Mr. Lennox Browne, at the meeting of the British Medical Association, brought forward some cases illustrating the successful treatment of suffocative goître without excision of the gland. The particular measures adopted were—(1.) The injection of iodine into the substance of the gland. (2.) The introduction of a seton so as to produce absorption. In all the cases (six) the result was satisfactory.—("Brit. Med. Journ.," Dec. 30th, 1876.)

Post-nasal Catarrh.—Mr. Lennox Browne advises a modification of Dr. Ferrier's bismuth snuff. He prescribes three parts each of starch and powdered acacia to two of bismuth.—("Brit. Med. Journ.," Aug. 26, 1876.)

Graves's Disease.—Dr. James Russell publishes a series of thirteen cases illustrating the clinical features of the malady. Nervous derangements in some form or other constitute a prominent feature in the descriptions given by different writers, but Dr. Russell calls attention to the fact that some of the cases he reports point to considerable independence between the nervous disturbance and the more special symptoms of the disease. This independence is shown by the different effects of treatment on these two elements, by the different periods of access, or else by considerable disproportion between the general nervous disturbance and the proptosis, the goître, and even the vascular disorder.—("Med. Times and Gaz.," Sept. 2nd and 30th, 1876.)

Dr. Henry Day publishes two cases of exophthalmic goître, and after summing up all our knowledge on the subject, points out the difficulty under which we still labour—a want of knowledge "as to the effects of nerve function, and as to the correlation of each special nerve function on the purposes of nutrition." He considers that the weight of opinion lies in favour of some pathological condition of the sympathetic as the cause, but what the precise nature of that state may be has not yet been discovered, although it has been demonstrated that there need not be of necessity any absolute alteration of organic nerve structure. The treatment, purely empirical, is summarised as follows: Iron *may* be given, digitalis *should* be given, iodine *must not* be given. Dr. Day believes that he has seen iron, but much more frequently digitalis, do some real service in modifying the heart symptoms.—("Lancet," Sept. 23rd and 30th, 1876.)

Dr. J. Burney Yeo records the case of a female patient, aged 35, also one of a patient 23.

Certain new phenomena were observed in these cases; they were — falling out of the hairs of the eyebrows and eyelids coincidently with the proptosis; the symptoms were developed in a peculiar crossed manner, the projection of the left eye and enlargement of the right lobe of thyroid being first observed, and afterwards the projection of the right eye with enlargement of the left lobe of the thyroid; profuse perspirations arising without any obvious cause; constantly recurring diarrhœa; and emotional excitability of the nervous system.

Dr. Yeo observes that no kind of medicinal treatment is attended with the same marked benefit which arises from change of air and scene. He believes the disease to be primarily a neurosis of the emotional nervous centres.—("Brit. Med. Journ.," March 17th, 1877.)

Tracheotomy.—Dr. Cameron (Glasgow), in some clinical observations on tracheotomy, mentions two cases of laryngitis occurring in pregnancy, in both of which tracheotomy was successful in restoring easy breathing; in both premature labour was commenced and completed, and both ended fatally. A third case is mentioned, in which the onset of labour was a direct consequence of asphyxial symptoms. After showing the connection between interference with the respiration and the supervention of labour, Dr. Cameron states, that in the cases of pregnant women suffering from any form of obstructed breathing remediable by tracheotomy, this operation should be performed at a very early stage of the disease, in order to ward off the advent of premature labour.

Eight cases of croup and diphtheria are mentioned in which tracheotomy was performed; of these five died and three recovered.—("Brit. Med. Journ.," Jan. 20th, 1877.)

Cheyne-Stokes Respiration.—Dr. W. H. Broadbent records a case of cerebral hæmorrhage in which this phenomenon was present.

The patient, 64 years of age, became suddenly hemiplegic (right) and aphasic, and an hour afterwards, when first seen, the Cheyne-Stokes breathing was marked. Six hours afterwards speech had partially returned, and the right leg was moved slightly; there had been no loss of consciousness. The breathing continued of the same character as before; the pause lasted from fifteen to twenty seconds, during which time there was not the least movement of chest or abdomen, the breathing then began in shallow and gentle respirations, and gradually rose to a sort of climax, when the movements of the chest were free and forcible, and the entry and exit of air at the nostrils or mouth noisy; there was then a gradual subsidence and eventually a complete arrest in from thirty to thirty-five seconds. The most careful observation of the pulse and heart failed to detect the least variation either during the respiration or when it was suspended. At the end of the pause fidgety movements of the left leg were observed. This peculiar method of breathing continued for three days and then gradually ceased. No cardiac valvular lesion and no evidence of fatty degeneration of the heart could be discovered.—("Lancet," March, 3rd, 1877.)

Dr. R. Wharry notes that he has observed this phenomenon in four cases:—

(1.) A patient with mitral constriction and also a dilated aorta. The rhythmic irregularity in the breathing began about four weeks before death.

(2.) A patient with double aortic and mitral systolic murmurs.

(3.) A child with acute nephritis following scarlet fever.

(4.) A young man suffering from typhoid fever complicated with pneumonia.—("Lancet," March, 10th, 1877.)

Dr. Wharry also reports the case of a patient under Dr. Andrew's care at St. Bartholomew's Hospital, in which typhoid fever was complicated with extensive consolidation of the right lung, and when the exhaustion was extreme the phenomenon of Cheyne-Stokes breathing developed. As the patient rallied the breathing again became regular. While the rhythmical breathing was present the patient was comatose and markedly livid. There was no evidence of coarse cardiac lesion, but weakening and prolongation of the first sound indicated probable softening of the muscular tissue. Large quantities of brandy were administered; for a short time the patient took an ounce every hour. The patient, who was 23 years of age, left the hospital within two months, and was then convalescing satisfactorily.—("Lancet," March 17th, 1877.)

Mr. Frederick Treves (Derby) reports a case of profound anæmia in which this phenomenon was observed. The patient, 38 years of age, was admitted to hospital for comminuted fracture of the leg. A fortnight afterwards the leg was amputated in consequence of profuse suppuration and copious hæmorrhage. Thirty hours after the operation the peculiar breathing was observed; respiration would cease for about fifteen seconds, and then gradually accelerate and diminish, the whole period occupying about one minute and a-half. The patient died six hours after the breathing began to present the Cheyne-Stokes feature.

It was found that, by pulling the tongue forward it was possible to lessen the duration of the pause to one-half its usual length. When the patient was undisturbed, the pause would be fifteen seconds in length, but breathing was at once resumed after a pause of six or eight seconds when the tongue was drawn forwards. At the post mortem examination no cardiac lesion could be detected.—("Lancet," March 31st, 1877.)

Empyema.—Mr. Anthony Bell publishes three cases to show the results of free incision, *versus* the aspirator, in empyema:—A boy, aged 19, was cured in two months; a man, aged 34, was cured in three months; a man, aged 36, was cured in ten weeks. The patients all continued in good health more than twelve months afterwards. The incision was made in each case between the seventh and eighth ribs, in a line with the anterior margin of the axilla.—("Brit. Med. Journ.," July 22nd, 1876.)

Dr. Thomas Eastes writes, that all risk accompanying the washing out of the pleural cavity after the operation of paracentesis or incision, due to the alteration of intra-thoracic pressure, is done away with by using a double tube, and injecting the fluid through one channel whilst it runs out freely through the other.—("Brit. Med. Journ.," Nov. 18th, 1876.)

Dr. E. Markham Skerritt publishes a case of empyema, occurring in a boy 8 years of age, treated by Lister's antiseptic method. The discharge ceased, the drainage tube was removed, and the patient was cured in about two months.

Dr. Skerritt claims for the antiseptic method the following advantages:—

(1.) A free discharge is allowed.

(2.) Decomposition and consequent absorption of the products of putrefaction are prevented.

(3.) The treatment is very much less disturbing and exhausting to the patient, because the process itself is much simpler, and also because it is less frequently repeated.

(4.) There is no irritation of the pleura.

(5.) One, and perhaps the chief, cause of sudden death during the after-treatment is avoided.—("Brit. Med. Journ.," July 22nd, 1876.)

Dr. Donald Fraser, reports a case of empyema in a young lady, on whom paracentesis was once performed, but afterwards perforation of the lung took place, and the pleural cavity discharged its contents through the bronchi. Albuminous expectoration in large quantity was a prominent symptom for about forty-eight hours after paracentesis was performed. The patient made a good recovery.—("Brit. Med. Journ.," July 22nd, 1876.)

Mr. Ticehurst reports a case of pleuro-pneumonia followed by empyema, treated first by paracentesis, and then by incision of the chest. The patient was a lady 28 years of age. Four weeks from the commencement of her illness five pints of pus were withdrawn by the aspirator. Ten days later a free incision was made and six pints of pus escaped. Ten weeks afterwards, the discharge had ceased entirely, and recovery was complete with no visible distortion of the affected side (left).—("Brit. Med. Journ.," July 22nd, 1876.)

Surgeon-Major J. C. Hornsby Wright gives an abstract of a case of empyema occurring in a man, aged 22, from whose left pleura about 2,693 ounces of pus were removed during a period of about nine months. The chest-wall had fallen in to the extent of two inches, but the patient was apparently convalescent.—("Brit. Med. Journ.," July 22nd, 1876.)

Two cases are given by Dr. Dickinson showing the utility of iodine injections. He has seen more benefit from iodine (two drachms of the liquor to one pint of water) than from any other form of injection. Carbolic acid seems to cause serious irritation with marked evening rise in temperature, particularly in cases where there is an extensive suppurating surface, and it is in such cases that iodine is most useful.—("Brit. Med. Journ.," July 8th, 1876.)

A case has been under observation in St. George's Hospital of exaggerated thoracic deformity, together with a natural opening in an unusual position, *i. e.*, at the level of the spine of the scapula between it and the spine. A second opening existed behind but lower down, and the scar from a third was seen in the axilla.—("Brit. Med. Journ.," July 8th, 1876.)

Dr. Cayley reports a case in which the washing out of the pleural cavity was followed by fatal convulsions. The patient, aged 36, had been tapped three times, and only serum escaped. On the fourth tapping, twelve ounces of fœtid pus were withdrawn. The cavity was then washed out daily with weak solution of iodine. On the tenth repetition of the washing-out process, the patient was seized with convulsions, the temperature ran up to 107° in the axilla, he became profoundly comatose, and died in sixteen hours. At the post mortem examination nothing was found which would account for the symptoms. There was neither thrombosis of the pulmonary veins nor embolism of the brain.—("Brit. Med. Journ.," Nov. 4th, 1876.)

Dr. Bennett reports a case of empyema with pleural fistula, treated successfully by Lister's antiseptic method, modified by the substitution of salicylic acid for carbolic acid. The patient, 23 years of age, was quite cured nine months after the first tapping; the chest had fallen in so as to measure, at the level of the fistula, two inches less on the diseased than on the sound side. — ("Dublin Med. Journ.," Nov., 1876.)

Dr. Broadbent, at a meeting of the Clinical Society of London, read notes of a case of effusion into the left pleural cavity;

paracentesis and aspiration of eighty ounces of serum were followed three hours and a-half afterwards by sudden death, apparently from syncope. The patient was 62 years of age; the heart was found to be large and flaccid, but not seriously diseased. There was no thrombosis of the vessels of the collapsed lung, or embolism of the heart or cerebral arteries.—("Brit. Med. Journ.," Nov. 4th, 1876.)

A case, occurring at the Victoria Park Hospital, is reported by Dr. Peacock, of empyema, probably following scarlet fever, opening through the lungs and externally. The patient, 8 years of age, had been ill three months, and she was discharged cured nine months afterwards.—("Brit. Med. Journ.," Nov. 11th, 1876.)

Dr. Pye Smith, at a meeting of the Pathological Society of London, related a case of suppuration in the brain and spinal cord immediately following the cure of empyema. The patient, aged 18, was tapped, and the empyema cured, when other symptoms came on, vomiting, high temperature, left hemiplegia, and coma.—("Brit. Med. Journ.," Nov. 11th, 1876.)

S. S., a boy aged 16, was admitted on June 26th to the Royal Naval Hospital, Plymouth, under the care of Dr. James Jenkins, C.B., with pleuro-pneumonia of the left side. On July 8th the aspirator was used, and 144 ounces of pure pus were drawn off. Three days later the aspirator needle was a second time introduced, and thirty-four ounces of pus were removed. On August 18th aspiration was repeated, and twenty-five ounces of pus were drawn away. From this time the patient steadily improved; no further aspiration was necessary, and he was discharged from the hospital cured on the 14th of November, with but slight deformity of the chest.—("Lancet," Dec. 16th, 1876.)

Mr. G. Cooper Franklyn reports the case of a girl aged 17, from whose left pleura fifty to sixty ounces of pus were removed by means of a trochar, followed by a free incision with a bistoury; an elastic catheter was introduced as a drainage tube. She afterwards had an attack of peritonitis, and then a parotid abscess. The drainage tube was removed three days after its insertion, but the fluid collected again, and paracentesis was adopted a second time a month after the first operation. Ten or twelve days after the second operation the patient began to complain of a curious "cough," and just at this time the lung expanded and the pleura ceased to excrete pus. Three or four days later the drainage tube was removed, and the patient steadily improved. Nine months afterwards her health continued good.—("Med. Times and Gaz.," March 31st, 1877.)

Dr. Andrew Clark reports the case of a woman aged 33, from whose left pleura ninety ounces of pus were withdrawn three months after an accident. A second aspiration was performed two days after the first, when sixty ounces of pus were removed : at the same time ten ounces of pus were withdrawn from a large lum abscess which had a decided impulse on coughing. A fortnight later aspiration was again necessary, and a drainage tube was inserted: this tube remained in position for nearly two months. At the time of its removal the lung had expanded to a considerable extent, and the patient appeared to be convalescent.—("Med. Times and Gaz.," May 12th, 1877.)

Dr. J. G. Sinclair Coghill reports a case of œsophageal fistula in a man aged 33, who, after an illness of seventeen months' duration, was admitted to the Royal National Hospital at Ventnor. Two openings at that time existed on the right side of the contracted thorax, the one three inches from the middle line of the sternum between the third and fourth ribs, the other three and a-half inches from the middle line, between the fifth and sixth ribs. No communication existed between the two fistulous openings.

Two months after admission food was found to escape from the upper of the two parietal orifices: both fluids and solids when *gulped*, that is, swallowed in larger quantity than could readily pass through the cardiac orifice of the stomach, and so distending the œsophagus, were found to escape through a breach in the œsophageal wall, and would ultimately issue from the wound.—("Brit. Med. Journ.," Jan. 20th, 1877.)

Dr. F. de Havilland Hall, commenting on two cases of empyema, advises that in all cases when pus reaccumulates after one thoracentesis, a drainage-tube should be passed through two openings, and that, if possible, this should be done in combination with the antiseptic method. This plan is much more successful than repeated tapping, or one opening some distance above the diaphragm.—("Lancet," Jan. 20th, 1877.)

Aspiration in Pleuritic Effusion—Dr. Balthazar Foster divides cases of pleuritic effusion requiring evacuation into the following classes:—

(1.) Acute cases. In these the use of the aspirator is forced upon us by certain urgent symptoms, especially dyspnœa.

(2.) Cases of over three weeks' duration, where fever has abated. Here the operation should be performed to relieve the morbid condition and expedite recovery.

(3.) Chronic pleurisy, with exacerbations. Here, if the chest is one-half to two-thirds full of fluid, and the disease has lasted over two months, aspiration is decidedly indicated.

(4.) Empyema. Pus being present, the rule should be evacuation.—("Brit. Med. Journ.," Jan. 27th, 1877.)

Dr. Bowditch states that he has performed thoracentesis 328 times on 207 patients, and that none of his patients have died immediately or in consequence of the operation. His rule is to stop suction the moment the patient begins to suffer from any uncomfortable symptom.

As regards the subsequent treatment of empyema, Dr. Bowditch thinks that patients are often made worse by too much "washing out of the cavity;" so long as the patient continues to do well nothing should be done.—("Med. Rec.," Aug. 15th, 1876.)

Pleuro-pneumonia. — Dr. R. Wharry, reports a case under the care of Dr. Andrew, of a man aged 38, under treatment for pleuro-pneumonia. The pneumonia cleared up, but left pleuritic effusion. Paracentesis was performed, forty-five ounces of clear fluid were removed, and the patient steadily improved. Twelve days afterwards (the patient being apparently convalescent) the exertion of walking up-stairs, following some slight mental excitement, dislodged a large fibrinous clot that had formed, either in the auricular appendix or amongst the columnæ carneæ of the ventricle. This clot, plugging the orifice of the pulmonary artery, gave rise to symptoms of most urgent dyspnœa, and produced death in about ten minutes.—("Med. Times and Gaz.," Oct. 28th, 1876.)

Pneumothorax.—Dr. H. M. Church, at a meeting of the Medico-Chirurgical Society of Edinburgh, related the particulars of a case of pneumothorax coming on suddenly in a hammer-man, 37 years of age. He had gone out to work in the morning as well as usual; an hour afterwards he was in a state of collapse with extreme dyspnœa, and the right side of the chest appeared to be enormously distended, and was tympanitic. A canula introduced into the right pleural cavity allowed a quantity of air to escape with a hissing sound, and gave almost immediate relief. Dr. Church believes that a communication must have been established between the pleural cavity and the interior of the lung through the giving way of an aggregated mass of emphysematous air-cells.

A piece of linen dipped in carbolic acid solution was placed tightly over the end of the canula, and by holding the finger over the orifice during inspiration, air was prevented from entering, whilst it was allowed free exit during expiration.—("Edinb. Med. Journ.," June, 1876.)

Pneumothorax as an Early Symptom of Pulmonary Disease.—Dr. Angus Macdonald reports three cases of pneumothorax occurring as an initial symptom of lung disease; in one case as a complication of tubercular phthisis before it had reached the second stage; in the other two cases, altogether independently of tubercle, certainly in the one as proved by autopsy, and presumably in the other, from its very successful issue.—("Edinb. Med. Journ.," Feb., 1877.)

Mouth-breathing and its Consequences.—Dr. J. P. Cassells contributes a paper entitled "Shut your mouth and save your life." He believes that this proverb may prove to be a most valuable therapeutic procedure, not only in the prevention and cure of ear diseases, but in the prevention and cure of those ever-recurring catarrhal affections of the naso-bronchial mucous membranes which prove so intractable to other forms of treatment.—("Edinb. Med. Journ.," Feb., 1877.)

The Treatment of Phthisis.—A reviewer, commenting on the various opinions entertained as to the value of treatment in phthisis, divides them into three classes—those that regard phthisis as beyond the reach of direct preventive or curative measures, but look upon dietetic and hygienic rules as having considerable value; those which regard climate as having some special influence upon phthisis; finally, those that regard drugs as having more or less a curative power. In speaking of cod liver oil, he reminds us that Dr. Williams looks upon it as the remedy that, if carefully used, is sure to retard the disease and prolong life more than any other known means; and considers that the modern plan of including sunshine, rest, fresh air, and suitable climate in the treatment of phthisis has no small share in the improved results.

The most suitable climates for phthisical patients cannot be selected upon theoretical grounds, but must be judged by experience and tested practically. Countries free or almost free from it are not always suitable, as, for instance, the Orkneys, Iceland, or Siberia; and conversely, a country may be beneficial to imported phthisis, while it does not spare its own offspring; thus, Nubia is a most favourable place for British consumptives, yet the Nubians are occasionally destroyed by phthisis. Again, Southern Devonia, a favourable resort for phthisical Londoners, seems a very hotbed of the disease for its own native population.

Dwelling upon the observations of Dr. Buchanan and of Dr. Bowditch, which show conclusively that drying of the soil by drainage is followed by diminution in the phthisis death-rate, the reviewer remarks that drainage has other objects and results than drying the soil. A lessened death-rate from phthisis does not prove that dampness of the soil is the sole cause of the disease. Lincolnshire, which is exceptionally malarious, has a low mortality from phthisis. In the marshy districts where ague is prevalent, phthisis is rare until the district is drained, then the ague disappears and phthisis becomes common. Both in dry elevated places and marshes phthisis is rare as a native product.

After surveying recent opinions on the different methods of treatment of phthisis, the reviewer comes to the following conclusions:—

With a far more accurate knowledge than heretofore of the pathology of phthisis, and far better evidence of the actual course and the precise mode of its cure, all special means for promoting that end have been found fallacious. We have come to concur, therefore, in effect, if not explicitly, in a general policy which proceeds upon no other assumption than that the damaged lung is likely to share in the general welfare of the individual. There is no treatment of phthisis;

there is a great variety of treatment, as there is a great variety of temperament, for those who suffer from phthisis.

Yet while the amplest description of phthisis treatment, that can be written down as generally true for the great mass of its victims, resolves itself into little more than the description of a healthy mode of life, there are important empirical facts to indicate at least the reasonableness of seeking in individual cases to correct the disease by special means. There is evidence, for instance, of the curative effects, in their respective degrees, of cod liver oil, of climate, of exchanging an in-door for an out-door life, and even of the hypophosphites of lime and soda. Ignorant as we are both of the manner and measure of benefit by these agencies, it is but just that each sufferer should have the opportunity of testing in his own person whether any of them reaches so far as to him. No promise can be held out beforehand of any particular result, and in the case of climate change, the selection of those that shall go and those that shall stay, fallible and often disastrous as it is, is governed for the most part by obvious considerations of common sense.

Treatment is at best empirical, and where empiricism fails, there is legitimate room and scope for a host of theories and their corresponding remedies. No inference is secure and no practice destined to be permanent. So considered the present aspect of medicine is not bright, or its immediate future assuring. But there is another side where light is already shining, and towards which recent progress in the pathology of phthisis bids us look with almost limitless hope. It is not in the direction of cure but of prevention.—(" Brit. and For. Med. Chir. Rev.," Jan., 1877.)

Dr. J. Burney Yeo sums up the results of recent researches on the treatment of phthisis in a paper read before the Medical section of the British Medical Association. He says that "the tendency of modern investigation is to endeavour to discover the genesis, to seek out the origin, of disease, and, if possible, to deal with it at its source." The prevention of pulmonary consumption is dealt with under three heads:—

(*a.*) The prevention of the transmission of the phthisical constitution from parent to offspring.

(*b.*) The prevention of the development of the disease when the predisposition exists.

(*c.*) The prevention of those unhealthy social conditions which are known to favour the production of phthisis.

Dr. Yeo then comments on certain remedial measures which modern research has found to be of use in phthisis. The first point considered is the use of the *alkaline hypophosphites*. From an experience of about 5,000 cases in which they have been employed, Dr. Yeo concludes that the hypophosphites have no claim whatever to be regarded as specific remedies for tubercular disease, but that they are of considerable value in a certain limited class of cases. They seem to be productive of much more benefit in young than in older persons. They are of the greatest use in children in all forms of chronic lung-disease; and next to these they are most serviceable in young adults of fair complexion, not very cachectic or emaciated, and with disease limited to the upper part of one lung. All the symptoms of phthisis may disappear under their use, and the general condition of the patient, as well as the physical signs, may undergo rapid amelioration. The improvement which follows the use of the hypophosphites is frequently of temporary duration, and in some cases the subsequent advance has been unusually rapid and the disease quickly fatal.—("Brit. Med. Journ.," Feb. 10th, 1877.)

Dr. Yeo next calls attention to the use of *antiseptic agents*, and more especially antiseptic inhalations. He does not bring forward any fresh evidence in favor of this method, but he states that he does not doubt the value of antiseptic inhalations, even if they only have the effect of temporarily cleaning the pulmonary surface.

He believes that it is possible to detect phthisis by the smell; that there is a peculiar nauseating odour in the breath of many phthisical patients, even before the development of marked physical signs.

As regards the remedial influence of *local rest* for the portion of the lung diseased, Dr. Yeo doubts if enforced inactivity of the respiratory function is advantageous in phthisis generally.

The benefit to be derived from *mountain air* is considered by Dr. Yeo to be beyond question. Where the disease is limited to one apex, or when it is chiefly catarrhal, and where there is no very intense cachexia or acute febrile symptoms, and the patient's muscular strength is good; or when the disease, though more advanced, is stationary, and the general debility is not great; removal to a mountain climate is likely to be of much service.—("Brit. Med. Journ.," Feb. 17th, 1877.)

Dr. J. C. Thorowgood publishes cases illustrating the influence of medicinal treatment in arresting pulmonary phthisis, and the value of certain hypophosphites in contributing to this arrest. When phthisical disease is confined to one lung, and is of the catarrhal pneumonic kind, a favourable prognosis may be very reasonably given, even if a cavity be already developed. It is in these cases of catarrhal pneumonia, limited to one lung, that eminently satisfactory results have followed the administration of the hypophosphites of soda and lime.—("Brit. Med. Journ.," May 26th, 1877.)

Dr. Thorowgood, in some notes read before the West Kent Medico-Chirurgical Society, on the treatment of phthisis, insists on the necessity for a dry bracing climate. Humid and relaxing climates promote the softening and breaking-down of lung-tissue. The hypophosphites of lime and soda hold a high place in Dr. Thorowgood's list of remedies.—("Brit. Med. Journ.," Dec. 23rd, 1876.)

Mr. Grellet reports from the Hitchin Infirmary six cases of phthisis treated with hypophosphite of soda, all of which seemed to derive very considerable benefit from the treatment.—("Lancet," Jan. 20th, 1877.)

Curability of Acute Phthisis.—Dr. McCall Anderson reports three cases of acute phthisis, illustrative of the curability of tubercular disease.

The first was a boy, aged 17, admitted to hospital after a fortnight's illness. Three days later the pulse was 142, temperature 105·6°. Eight days later his condition was no better, the temperature reaching 105° every night. He was then ordered an antipyretic powder, consisting of quinine and digitalis, of each one grain, opium half a grain, to be given every four hours. He was fed every half-hour, and took six ounces of brandy daily. The night sweating was controlled by means of atropia (gr. $\frac{1}{100}$th) given hypodermically at night.

In less than a week the temperature had subsided to 99°, his general symptoms had much improved, he gained flesh rapidly, and convalescence steadily proceeded.—("Lancet," March 24th, 1877.)

Dr. McCall Anderson publishes two other cases of acute phthisis, both of which completely recovered. In the first case atropia was injected, with the view of checking the perspiration, which it entirely arrested; and quinine, digitalis, and opium were conjoined with the use of iced cloths, with the view of bringing down the fever, and then followed an immediate and steady fall of temperature. In the second case the quinine, digitalis, and opium having failed to counteract the fever, iced cloths to the abdomen were superadded, upon which the temperature fell in less than twenty-four hours from 104° to 98·2°, and there was then no further difficulty in preventing any undue elevation of temperature.—("Lancet," March 31st, 1877.)

Tubercular Peritonitis.—Dr. McCall Anderson publishes some cases illustrative of the curability of attacks of tubercular peritonitis and acute phthisis (galloping consumption).

The first case reported is that of a girl, 10 years of age, admitted with ascites, presumed to be dependent on tubercular peritonitis. She was treated with pancreatic emulsion, syrup of iodide of iron, and cod liver oil. Improvement was rapid, and she was dismissed well, although there was still slight dulness at the apex of the left lung.

A second case mentioned is that of a boy, 12 years of age, with a very strongly tuberculous family history, who had a most severe attack of tubercular peritonitis, but who rapidly recovered.

A third case is alluded to, that of a little girl who was tapped twice and made a good recovery.

In alluding to the possibility of an error in diagnosis, Dr. Spencer Wells' case is quoted, in which the abdomen was opened for the purpose of ovariotomy, and the peritoneum was seen to be studded with tubercles. This patient made a good recovery, and illustrates the fact that removal of the effused fluid may contribute to a favourable result in cases of tubercular peritonitis.—("Lancet," March 3rd, 1877.)

Prognosis in Phthisis.—Dr. Wilks remarks that hæmoptysis is more frequent in the earlier than in the later periods of phthisis, and that hence it is often difficult to discover physical signs for it. The mistake is sometimes made of condemning a case wherein signs of excavation are found, whereas they are often evidence of a chronic form, and one likely to remain stationary for some time. The really worst cases may prove to be those in which but little physical alteration is at first detected, and acute tuberculosis will run a rapidly fatal course without any excavation.

The pigeon-breasted, narrow chest is often considered to be an indication of a phthisical tendency, but without sufficient reason: such a form results from early rachitis, but the true phthisical chest is a flat one, with the sternum rather falling in than protruding. Dr. Wilks sees no close connection between rachitis and phthisis.—("Brit. Med. Journ.," Oct. 14th, 1876.)

Rachitis.—Sir William Jenner describes the weakened respiratory condition consequent on rickets, and mentions the liability of such children to catarrh and bronchitis; a plug of mucus in a bronchial tube may cause death.— ("Brit. Med. Journ.," Oct. 28th, 1876.)

Sea-sickness in Consumption.—Dr. C. B. Faber, writing on the value of sea voyages in the treatment of consumption, observes that consumptive people are less subject to sea-sickness than others. He did not observe any of the serious consequences of sea-sickness amongst consumptive patients such as might be expected, viz., rapid wasting, hæmorrhage, etc. The absence of hæmorrhage was the more remarkable, as he had subsequently on the same voyage to deal with a sort of hæmorrhagic epidemic among non-consumptive as well as consumptive persons. He considers that the best remedy for sea-sickness is oxalate of cerium given in two-grain pills. Only if the vomiting continue to an alarming extent are opiates, chloroform, or chloral, required. Nitrite of amyl signally failed. (This latter statement is quite corroborated by the reporter's experience in a voyage to Australia and home round Cape Horn.)—("Practitioner," Sept., 1876.)

Phthisis.—Dr. J. E. Pollock gives a summary of the characters of those chronic forms of lung disease in which an over-development of fibrous tissue occurs. He discards the term "fibroid" as a distinct variety of phthisis on the ground that there are no cases of chronic disease of the lung in which fibroid changes do not occur. The unilateral character of the disease, the contraction and the displacement of adjacent organs, are the most striking clinical features. *Clubbing of the fingers* was found to exist in 27 per cent. of all cases of phthisis: the average duration of these cases was forty-five months, as compared with fifteen months the observed duration of ordinary phthisis. Clubbing is therefore a visible sign of chronicity, and it arises from a direct growth of fibro-cellular tissue, a result of lowered nutrition and imperfect arterialisation of blood. He concludes with some observations on the conservative effects of fibroid changes in the lung.—(" Lancet," Oct. 21st., 1876.)

Asthma Nervosum.—Dr. Wahltuch publishes seven cases of nervous asthma, all of which were speedily relieved and permanently arrested by electricity and arsenic-inhalations. He says :—

My plan of treatment was the following. At first, I ordered a large dose of muriate of quinine (ten grains) to be taken every evening before the expected attack, which periodically re-appeared at the same hour before bed-time. The result was a later outbreak of the attack, which awoke the patient after a few hours of sound sleep. I then ordered spray-inhalations of arsenic twice a day, and in gradually increasing doses, changing now and then the preparations. The following were used in succession: Arseniate of soda (one-sixth to one-half grain); arseniate of potash (Fowler's solution, half a drachm to a drachm); arseniate of ammonia (one-quarter to one-half grain). To the inhalation I at first added tincture of datura tatula, but soon had to leave it out, as it produced symptoms of narcotic poisoning. The arsenic-inhalations were administered during the first two months twice a day; the third month, once a day; the fourth month, three times a week; the fifth month, twice a week; and after the fifth month, the inhalations were entirely discontinued. Considering my patient's disease to be of a nervous character, and believing the pneumogastric nerve to be the chief actor, I decided from the first to try also the effects of galvanisation. I selected the continuous current derived from Althaus's battery, with fifty small Smee's cells, of which I used at first five, and gradually and carefully increased to thirty cells. A wet sponge, dipped in tepid salt-water, and connected with either of the electrodes, was applied to the skin of the neck; that connected with the positive pole I put to the submaxillary fossa, along the inner edge of the sterno-cleido-mastoid muscle; and the other sponge, connected with the negative pole, I placed close to the trachea and near the sterno-clavicular articulation. I galvanised each nervus vagus separately from two to five minutes. Galvanisation was applied daily for six months.—(" Brit. Med. Journ.")

Pericarditis.—Dr. Sibson gives the notes of 326 cases of acute rheumatism :—

Pericarditis was present in	63
(Of these 54 had endocarditis superadded).	
Endocarditis alone was present in	108
Endocarditis was threatened or probable in	76
There was no sign of endocarditis in	79
Total number of cases of acute rheumatism	326

Thus out of a total of 326 cases, only one-fourth entirely escaped cardiac complications. Pericarditis was present in one out of every five cases.

Dr. Sibson found that in patients with acute rheumatism, complicated by pericarditis, the joint affection was usually in direct relation to the severity of the heart mischief.

In three-fourths of the cases (15 out of 19) of servants attacked with pericarditis the severity of the joint affection bore a strict relation to the severity of the heart affection.

Domestic servants are very subject to acute rheumatism, owing to their exposure to draughts and damp, and also to the fact that their joints get over strained by the heavy stair-work, etc., that they have to do.

Dr. Sibson's tables show that women of mature age, who followed laborious occupations like servants, were affected with pericarditis only in a moderate proportion and in a comparatively mild form. Those of tender age who did not follow a laborious calling were not attacked with cardiac inflammation with anything like the same frequency as young female servants.

With regard to males, indoor servants under 21 years are especially liable to acute rheumatism and heart complications. Excessive labour in the open air in men of mature age is a frequent cause of acute rheumatism with a strong tendency to pericarditis. Of patients over 25 years of age, the number of men affected with pericarditis, usually combined with endocarditis, was three times as great as the number of women.

The joints most used are, as a rule, first affected in acute rheumatism, and suffer most severely. In carpenters and coachmen Dr. Sibson found the upper extremities most affected; while domestic servants suffer most in their feet, ankles, and knees.

Dr. Sibson partly explains the fact noticed by him, that the severity of the heart mischief is usually in direct relation to the joint affection, by assuming that the inflammation of the joints aids in producing laborious and even tumultuous cardiac action.—("Reynolds' System of Medicine," Vol. IV.)

Paracentesis Pericardii.—Dr. Nixon, in a paper read before the Medical Society of the College of Physicians of Ireland, gave particulars of a case of acute rheumatism occurring in a man, aged 20 in whom copious pericardial effusion endangered life. Paracentesis, was performed by means of Dieulafoy's aspirator, with No. 4 trochar and canula. The operation gave immediate relief, but the patient died six days afterwards from cardiac and pulmonary symptoms combined.—("Dublin Journal of Medical Science," June, 1876.)

Dr. J. W. Hunt reports for Dr. Wilson Fox the case of a girl, aged 16, with a history of acute rheumatism at 5 years of age, admitted after three days' illness with articular rheumatism. Salicylic acid failed to do good in doses of twenty grains every three hours continued for eight days. After this, salicin, digitalis, aconite, and cold-sponging were tried, but in spite of everything a condition of hyperpyrexia ensued, and pericardial effusion supervened. When the aspirator-needle was introduced very little fluid, not more than a few drachms, escaped, and no change in the symptoms resulted.

Brandy in large doses failed to reduce the temperature, which rose to 107·4° after the patient had taken thirty ounces of brandy in fifteen hours.

The effect of packing ice between the folds of the sheet covering the front of the chest was to bring down the temperature from 107·4° to 101° after an hour's application. The temperature again rose to 104° before death.—("Lancet," March 10th, 1877.)

Heart Disease in Children.—Sir William Jenner observes that the disposition to inflammation of the heart and its membranes is in direct proportion to the youth of the patient: the younger the heart, the more readily is it affected. The heart disease is likely to increase with years; as the heart grows the defect increases: children grow into their trouble rather than out of it. The importance of rheumatism is insisted on—if endocarditis in a child be the only symptom present, still it must be taken as strong evidence of rheumatism.—("Brit. Med. Journ.," Oct. 28th, 1876.)

Cardiac Bruit in Chorea.—Dr. Andrew Clark finds that, if there has been no previous heart-disease, the bruit will certainly disappear. This refers not only to the anæmic bruit, but to that which has the character of mitral reflux. The heart should always be examined when in strong action, as well as in quiet, if any doubt exist.—("Brit. Med. Journ.," Oct. 21st, 1876.)

Cardiac Bruit in Chorea.—Sir William Jenner points out the necessity of inquiring whether it varies or is constant: if it varies or is absent from certain beats it will often be dynamic, from irregular action of the papillary muscles.—("Brit. Med. Journ.," Oct. 28th, 1876.)

Anæmic Murmurs.—Dr. Peacock alludes to the difficulty in deciding whether a murmur is anæmic or organic. He believes that murmurs heard at the apex are sometimes anæmic, and that mitral murmurs are frequently much aggravated by anæmia.—(Dr. Peacock, "Prognosis in Cases of Valvular Disease of the Heart," Churchill, 1877.)

Reduplication of Heart-Sounds.—Dr. George Johnson, referring to a case of albuminuria with hypertrophy of the left side of the heart, explains reduplication of the first sound by considering that the first division of the double sound is the result of the systole of a dilated or hypertrophied auricle, for the contraction of such an auricle becomes sonorous.—("Brit. Med. Journ.," Dec. 23rd, 1876.)

Aortic Insufficiency.—Dr. Cockle reports a case illustrating what not unfrequently occurs—the liability to sudden death in cases of aortic disease. A girl, aged 30, in whom valvular incompetence resulted from an attack of acute rheumatism eight years previously, and in whom a second attack was followed by great deterioration of the general health and obvious loss of power, awoke suddenly from sleep, screamed, threw up her arms, and died immediately. After death the left ventricle was, as is usual in such cases, found to be distended with clotted blood, the clot extending up into the aorta.—("Lancet," Jan. 20th, 1877.)

Tricuspid Stenosis.—Mr. Gould, at a meeting of the Pathological Society of London, showed a heart with general valvular disease from a woman, aged 42, whose cardiac symptoms had existed two years. The three segments of the tricuspid valve were soldered together, so that the ostium would admit only the tip of the little finger. The mitral valve was also stenosed, the ostium being reduced to a mere chink. Such narrowing of the tricuspid orifice is rare, and is only found in connection with similar mitral disease.—("Brit. Med. Journ.," Dec. 23rd, 1876.)

Sphygmographic Tracings in Aneurism.—Dr. Mahomed states that the signs of aneurism in a tracing are :—

(1.) Diminution in volume of the pulse-wave.

(2.) A sloping upstroke.

(3.) Impairment or annihilation of the percussion element.

(4.) Partial or complete obliteration of the dicrotic and other secondary waves.

(5.) Generally diminution, but sometimes increase, of the amount of pressure required to develop the tracing.

If all or some of these characters are found in the pulse on the right side and not on the left, the aneurism is of the innominate; if in the right and partly in the left side it is of the innominate and transverse arch; if in the left only, it is of the transverse arch or root of the subclavian; if the signs are only partial and equal on both sides it is an aneurism of the ascending arch; if all are strongly marked, and only on one side, the aneurism is probably directly in the course of the subclavian artery and not involving the aorta.—("Brit. Med. Journ.," Feb. 17th, 1877; Report of Clinical Society.)

Intra-thoracic Aneurism.—Dr. Wilks reports an interesting case of dysphagia from aneurism of the arch of the aorta in which the difficulty in swallowing was evidently paralytic in its nature.—(" Lancet," Jan. 20th, 1877.)

Thoracic Aneurism, Laryngeal Symptoms.—A patient, aged 59, admitted to King's College Hospital with attacks of spasmodic dyspnœa, was found to have paralysis of the left vocal cord. Dr. Geo. Johnson explained the palsy of the left cord by the pressure on the left recurrent laryngeal nerve of an aneurism developing chiefly backwards from the transverse and descending aorta, and he explained the spasmodic dyspnœa by spasm of the right cord, a reflex result through the nerve-centre of irritation of the vagus trunk of the left side. This patient derived great temporary relief from chloral hydrate. Dr. Johnson finds chloral to be of the greatest use in pertussis and in spasmodic asthma.—(" Brit. Med. Journ.," July 1st, 1876.)

Cure of Aneurism.—Dr. Dobell suggests that the circulation above and below an aneurism should be temporarily stopped, while its fluid contents are withdrawn by an aspirator, and their place filled by a substance light, innocuous and unirritating, insoluble in blood, solid at the temperature of the blood, fluid at a temperature low enough not to damage tissue, and rapidly and permanently solidifying *en masse.* Such a substance, he says, may be found in spermaceti melting at 120°, or stearins melting at 130° Fah.*—(" Brit. Med. Journ.," Feb. 3rd, 1877.)

Aortic Aneurism..—Mr. Christopher Heath advocates distal ligature in cases of aortic aneurism. He was about to ligature the left carotid of a woman, aged 43, when death took place in the early stages of the operation. The patient had derived no benefit from rest, appropriate diet, and iodide of potassium in large doses, as the aneurism continued to increase in size. The death of the patient was due to the fact that the trachea was already very much compressed by the aneurism, and became practically occluded when the patient, previously anæsthetised, was made to lie down. The aneurism involved the orifice of the innominate, springing from the upper part of the transverse portion of the arch of the aorta between the innominate and left carotid.—(" Brit. Med. Journ.," March 31st, 1877.)

Rupture of the Aortic Valve.—Dr. Orton publishes the case of a man, aged 40, whose history—unmistakably that of traumatic valvular disease—is interesting. Nine months previously, whilst lifting a heavy weight, he felt something suddenly snap in his chest: he immediately fainted, and remained insensible till the following day. From this time he has heard a sound in the chest like a " pigeon cooing." A week afterwards he had a severe attack of cough and hæmoptysis. Physical examination disclosed the conditions usually present with well marked aortic valvular insufficiency.—("Lancet," Jan. 6th, 1877.)

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* In the case of aortic aneurism threatening external rupture, it is suggested that a fine carbolised bladder should be attached to the nozzle of the syringe containing the spermaceti, that it should be cautiously pushed into the cavity of the aneurism through a small aperture, and then immediately filled with the contents of the syringe. The spermaceti would thus be prevented from entering the current of the circulation.—H. D.

Mitral Disease.—Dr. Gowers exhibited to the Pathological Society of London a heart with mitral disease and dilatation, with hypertrophy of both ventricles, from a case in which during life there existed very high arterial tension. The mitral orifice was dilated to 5¾ inches. The posterior segment was very small, whilst the anterior was nearly double the normal size. The enlargement of this flap resulted from increased mechanical strain following atrophy of the posterior flap in consequence of old rheumatic endocarditis.—("Brit. Med. Journ.," Jan. 6th, 1877.)

Apex-Murmurs.—At a meeting of the South-eastern branch of the British Medical Association, Dr. Frederick Taylor read a paper on the diagnostic value of apex-murmurs. He enumerated the following sounds:—

(1.) The ordinary systolic blowing murmur, audible behind. (2.) A short localised murmur, inaudible behind. (3.) Presystolic. (4.) Pure diastolic. (5.) A combination of presystolic and systolic. (6.) A combination of systolic and true diastolic. (7.) A combination of systolic reduplicated second sound and diastolic murmur following on the second element of the second sound. This murmur (No. 7) is considered to be as certainly diagnostic of mitral constriction as the presystolic. The following murmurs suggest mitral narrowing:—Presystolic murmur (No. 7), diastolic, simple systolic, and double second sound.—("Brit. Med. Journ.," Jan. 6th, 1877.)

Hydatid of Lung.—Dr. Greenfield related to the Clinical Society of London a case of this kind cured by evacuation of the cyst through the bronchi. The patient, a girl, aged 17, had been treated for symptoms of phthisis of four years' standing, when after a fit of coughing she brought up a large piece of hydatid membrane, and ten days later there were physical signs of a large cavity at the angle of the right scapula.

Dr. Duffin alluded to a pamphlet on this subject by Dr. Bird, of Melbourne, whose conclusions were founded on an experience of 90 to 100 cases. Dr. Bird advocates early puncture with a fine trocar without the use of the aspirator: even for the purpose of diagnosis the trocar might be used.—("Lancet," March 3rd, 1877.)

Mediastinal Tumour.—Dr. Peacock, at a meeting of the Pathological Society of London, exhibited a tumour invading the lungs and heart, considered to be a medullary sarcoma. The expectoration during life had been of a "currant-jelly" like character, and Dr. Peacock considered this symptom to be peculiar to medullary sarcoma of the lung.—("Lancet," Oct. 21st, 1876.)

Foreign Body in the Left Bronchus.—Mr. Maunder reports the case of a boy aged 13, into whose trachea a glass sleeve-link had slipped. Nineteen days afterwards it was found that there were indications of partial obstruction of the left bronchus, and an operation was determined on. Tracheotomy was performed, the whole thickness of the structures on either side being secured with a stout silk suture, in order that the opening in the trachea might remain patent; and inversion of the patient was tried, but without producing any effect on the foreign body. Mr. Maunder then took a piece of silver wire about twenty inches in length, and with it formed a loop, which he passed through the wound down into the left bronchus: on being withdrawn after the second introduction it brought with it the foreign body enveloped in a mass of muco-pus. The patient was soon quite well.—("Lancet," Dec. 16th, 1876.)

Mediastinal Cancer, Aphonia from Laryngeal Paralysis.—Dr. J. Burney Yeo reports a case of a woman, aged thirty-seven, who had complained of cough and expectoration for five months. The symptoms much resembled those of sub-acute phthisis, but laryngoscopic examination showed that the aphonia depended on paralysis of the left vocal cord, and that none of the laryngeal changes commonly associated with turberculosis were present. This fact enabled a definite diagnosis of mediastinal growth to be arrived at, and subsequent symptoms, viz., enlargement of the cervical glands, and distension of the veins, verified its accuracy. At the post-mortem examination it was found that the left recurrent laryngeal nerve passed right through the cancerous mass, being traced through it with difficulty.

Dr. Yeo points out the fact that the pneumogastric nerves and their branches are very rarely involved in intra-thoracic cancerous growths, and he believes this case to be the first reported in England in which a paralytic condition of the vocal cords has been observed to be associated with intra-thoracic cancer.—("Lancet," Nov. 18th, 1876.)

Failure of the Heart during Inhalation of Ether.—Mr. Morton, M.B., reports a case of a man 44 years of age, in whom apparent failure of the heart occurred during the administration of ether for the removal of an eye. Artificial respiration was immediately adopted, and nitrite of amyl was administered, with speedy success. The patient soon breathed naturally, recovered consciousness, and was able to walk out of the theatre. It was noticed that the patient had a slight mitral regurgitant murmur.—("Lancet," Oct. 14th, 1876.)

This case recalls to mind a somewhat similar one of a young lady, who, whilst ether was being administered for dental extraction, suddenly ceased to breathe, became blue and pulseless. Artificial respiration soon restored both the heart's action and natural breathing. Great care was taken in the administration of the ether, as it was known that the patient had a loud mitral regurgitant murmur resulting from old rheumatic disease.—R. S. S.

Pain in the Chest of obscure origin.—Dr. J. Sherwood Stocker directs attention to cases of pain extending round one or both sides of the chest, or round the chest and down the arm, without any apparent cause. After excluding the possibility of herpes, pleurisy, aneurism, dyspepsia, and other disorders of the digestive organs, it will be found that on one side of the upper dorsal vertebræ, near the exit of the spinal nerves, there is a spot exquisitely sensitive to pressure. A simple blister applied over the painful spot, with tonics given internally, will generally effect a speedy cure.—("Lancet," March 31st, 1877.)

Complications of Rheumatic Fever—During the statistical year at St. Bartholomew's Hospital there was one case with a double mitral and double aortic murmur; one with double mitral and persistent systolic murmur at left base. In six cases endocarditis and pericarditis were both present. There was one case with double pneumonia; one with pneumonia on the left side; one with double pleurisy; one with pleurisy and pericarditis; two cases with pneumonia and pericarditis; one with endocarditis, pericarditis and double pleurisy; one with endocarditis, pericarditis, and double pneumonia; one with double pleuro-pneumonia, endocarditis, and pericarditis; one with pleurisy, pneumonia, and endocarditis.

Croup.—Tracheotomy was performed in two of the fatal cases, aged 2 and 1 years respectively, death occurring in the first case seven days, in the second, two days after operation.

Pneumonia.—One case of pneumonia occurring after childbirth was thought to be embolic. In one case the crisis occurred on the third day.

Gangrene of Lung.—In one of the fatal cases there were also pleurisy and nephritis.

Pleurisy.—In one fatal case there were also pneumothorax and tuberculosis.

(*See Table on opposite page.*)

Drainage Tubes for Anasarca.—At a meeting of the Clinical Society of London, Dr. Southey exhibited some capillary drainage-tubes which he found to be of use in the treatment of general dropsy. A tiny silver canula is introduced by the aid of a fitting trochar, and a fine capillary drainage-tube is then fitted over the little bulbous extremity. The fluid is thus allowed to drain away gradually, and is collected in a pan beneath the bed.—("Lancet," May 5th, 1877.)

Respirators.—A writer in the "British Medical Journal" comments on the utility of respirators, he says:—

They are a great protection against affections of the respiratory ap-

Statistical Table by Dr. Champneys.

Disease.	Males.	Females.	Total.	Deaths.
Rheumatic fever	83	106	189	7
Ditto with pericarditis	24	15	39	1
Ditto with endocarditis........	11	21	32	2
Ditto with lung disease........	10	8	18	0
Total	128	222	350	10
Pericarditis..................	3	4	7	4
Valvular disease..............	59	81	140	52
Aortic disease................	18	12	30	12
Aneurism of aorta............	13	1	14	6 died, 4 relieved.
Œdema glottidis	..	1	1	1
Croup	5	2	7	4 died, 3 cured.
Laryngitis	3	6	9	2
Acute bronchitis	5	2	7	1
Chronic bronchitis and emphysema	53	40	93	32
Pneumonia—				
Right side	22	10	32	6, all males.
Left side....................	18	16	34	7, ,,
Double	9	3	12	4, 3 males.
Lobular	5	..	5	1
Pleuro-pneumonia—				
Right side	12	3	15	4
Left side..................	16	3	19	3
Double	3	1	4	3
Total	85	36	121	25
Gangrene of lung	4	..	4	4
Pleurisy—				
Right side	17	8	25	2, both males.
Left side..................	21	9	30	3
Double	5	3	8	3
Empyema	7	1	8	4
Total	50	21	71	12

(St. Bartholomew's Hospital Reports, 1876.)

paratus, he says, particularly in preventing persistent winter-cough with expectoration. They secure some heating of the air when nasal respiration is not possible. In fogs they serve to intercept the water vapour and particles of carbon contained in the air. In cold winds they are a great preventative of colds, sore throats, and hoarseness. They also conserve a great deal of the heat lost in expiration, and so confer a decided sense of warmth. For those who are readily chilled on exposure to cold, and especially where great loss of heat is experienced while there is little production of heat, as when muscular exertion is wanting, respirators are found to be exceedingly useful and comforting.—("Brit. Med. Journ.," May 3rd, 1877.)

Respirator-inhaler.—Dr. William Roberts advocates the use of an inhaler consisting of a shallow tin box of the size and shape of the ordinary respirator: the top and bottom are perforated with holes, and the box is fitted with some porous material on which five, ten or more drops of some volatile drug are dropped. The fluids used are the following:—Turpentine, oleum pini sylvestris, spirit of camphor, the oils of sandal-wood and eucalyptus, compound tincture of benzoin, creasote, carbolic acid, iodine, and chloroform.—("Brit. Med. Journ," Feb. 3rd, 1877.)

Inhaler.—A new "Patent Pocket Inhaler" is described, consisting of a small glass tube, open at both ends, and containing in the centre some blotting paper for the reception of the medicated fluid. The fluid supplied with the inhaler is carbolate of iodine.—("Med. Rec.," Nov. 15th, 1876.)

Respirator Veil.—Mr. Lennox Browne recommends a veil consisting of an ordinary piece of blonde about twelve inches deep, over the lower four inches of which is sewn a double thickness of silk gossamer. To prevent the veil from becoming unpleasantly damp by the moisture of the breath, that portion which comes over the nose and mouth may be stiffened with a layer of very thin wire-gauze, so as to stand away from the face. The veil may be prevented from blowing up by a piece of elastic braid threaded through the lower hem.—("Brit. Med. Journ.," Nov. 18th, 1876.)

MATERIA MEDICA AND THERAPEUTICS.

On the Serum of Blood as a Therapeutic Agent.—Mr. Francis Vacher, as Medical Officer of Health, Birkenhead, being able to obtain supplies of serum from the slaughter-houses under his supervision, has employed it, chiefly, as a vermifuge, and as a substitute for cod liver oil. As an anthelmintic the serum should be administered in the morning, fasting, the dose varying, according to age, from one table-spoonful to a large wine-glassful. As a food-medicine one ounce of serum should be taken two or three times a day, about an hour before meals.—("Brit. and For. Med. Chir. Rev.," Oct., 1876.)

Gelseminum Sempervirens.—(*a.*) Its Action on the Circulation.—Dr. S. Ringer and Mr. W. Murrell, from thirty-three series of observations on patients in whom the toxic effects of the drug were produced, ascertained that gelseminum has little or no effect upon the circulation. Dr. Burdon-Sanderson also showed, by experiment on the rabbit, that gelseminum exerts no influence on the blood-pressure.

(*b.*) Its Action on the Respiration.—In man the drug produces giddiness, pain in the head, loss of sight, diplopia and ptosis, before respiration is in any way affected. Experiments with the spirometer and with the dynamometer show that gelseminum may produce very marked symptoms whilst but slightly affecting either respiration or muscular power.

The drug has been recommended in the treatment of cough. It ranks with ether, chloroform, and opium as a sedative, useful in those cases where there is excessive excitability of the respiratory centre.

Gelseminum was found to have no influence on the mind, none on the cutaneous sensibility, and none on the temperature of the body.—("Lancet," Oct. 21st, 1876.)

Physiological Action of Vanadium.—A paper on this subject was read by Mr. Priestley (Owens College) before the British Association. It was found that vanadium is a powerful poison, exerting a strong irritant action on the gastro-intestinal mucous membrane, but possessing in addition remarkable activity as a poison on the spinal cord, the medulla, and the heart. It paralyses the vaso-motor centre of the heart, acting on the intrinsic nervous mechanism of the organ, and not affecting the functions of the vagus as a cardiac inhibitory nerve.

Professor Arthur Gamgee, under whose direction the above researches had been executed, thought it well to institute a further careful examination of the action of vanadium on the intrinsic nervous mechanism of the frog's heart.—("Journ. of Anat. and Physiol.," Jan., 1877.)

Effects on the Circulation from the Use of Esmarch's Bandage.—Dr. Gamgee instituted a series of experiments on this subject. In all the cases it was found that there was temporary quickening of the pulse, both when the blood was expelled from the lower extremities, and when it was allowed to return to them again.—("Journ. of Anat. and Physiol.," Jan., 1877; "Lancet," Sept. 30th, 1876.)

Belladonna in Phthisis.—Dr. J. Milner Fothergill comments on the utility of this drug in checking perspiration. In some cases, especially those of slowly-spreading caseous pneumonia, with a pulse over 100, and a temperature over 100° Fah., as soon as the profuse night-sweats are checked, the patient begins to pick up, the appetite returns, and general improvement is manifest. The arrest of the drain of salts by the hidrosis at once inaugurates a change for the better.

Dr. Fothergill's experience of pulmonary phthisis has been mo encouraging ever since he began to employ belladonna extensive In some cases opium may be given with belladonna, in others oxide zinc with hyoscyamus does better. The dry throat and indistinctn of vision, which result from large doses, are borne by the patie without complaint, the effects on the sweating being so marke beneficial.—(" Practitioner," Dec., 1876.)

Anhidrotics in Pulmonary Phthisis.—Dr. Hayden observes that, in advanced stages of pulmonary phthisis, anhidrotics are most frequen demanded. The sweating usually occurs during sleep and towa morning, or after a paroxysm of coughing. In the former case it most effectually controlled by five grains of Dover's powder, giv once or twice in the course of the night; in the latter the inhalation ten to twenty minims of chloroform, or a full dose (ten minims ea of chlorodyne and liquor morphiæ, given during the fit of coughing, the best remedy. Tepid sponging with toilet vinegar and water bed-time is also useful in checking perspiration. Belladonna considered by Dr. Hayden to be inferior to Dover's powder checking the sweating of phthisis.

In acute miliary tuberculosis opium is the best remedy.—(" Du Med. Journ.," April, 1877.)

Casca Bark.—Dr. T. Lauder Brunton, in his Goulstonian lectur enters into an elaborate investigation of the physiological action this drug. He concludes as follows:—

" By the use, then, of a drug like casca, which contracts the vessel we shall almost certainly lessen œdema by diminishing the flow blood through the arterioles. At the same time, in all probabilit we shall increase absorption, both by a direct action upon the circul tion and tissues, and by the secondary effect proceeding from t augmented urinary discharge. Digitalis has hitherto been our gre resort in mitral disease, but I think it probable that in casca possess a drug more powerful still, at least, its effect upon t arterioles appears to be greater than that of digitalis, and it is qui possible that it may succeed in those cases of advanced mitral disea where digitalis fails."

In casca we possess a drug which strengthens and slows the hear contracts the arterioles, and increases the urine.—("Brit. Me Journ.," March 24th, 1877.)

Atropia.—Dr. T. Lauder Brunton points out that if long intermissio in the heart's action should threaten danger, we can avert it by a fr use of atropia, for this alkaloid completely paralyses the ends of t vagus in the heart, and no amount of stimulation to the nerve, eith direct or indirect, can then stop the pulse. This is not the only acti of the drug, for it paralyses the sensory nerves of the heart, and therefore theoretically indicated in irritable heart; it has been pr scribed with great advantage in such cases of palpitation.

Nitrite of Amyl.—Dr. T. Lauder Brunton describes the way in which regularity of the blood-stream is obtained by means of the nerves which act on the heart and vessels. Angina pectoris consists of a disturbance in the regulating mechanism. During the paroxysm, increase of blood-pressure exists, in consequence of excessive contraction of the arterioles. Nitrite of amyl possesses the power of dilating the vessels, and is thus theoretically indicated in angina pectoris, practically it is found to act as theory indicates it should do.—("Brit. Med. Journ.," March 31st, 1877.)

Gangrene of the Lung.—Mr. Benjamin Walker reports the case of a boy, aged 16, in whom gangrene of the lung existed. The vapour of turpentine gave relief, and removed the offensively fetid smell from the breath. Quinine in doses of five grains every four hours brought down the temperature in forty-eight hours from 103° to 97·7°. The patient took twenty-four ounces of brandy daily for three days, and milk to the extent of a gallon daily. He ultimately made a good recovery.—("Med. Times and Gaz.," May 12th, 1877.)

Carbolic Acid and Creasote.—Dr. G. Anderson Imlay directs attention to the utility of these drugs when applied locally in spray to the bronchial mucous membrane. He uses Siegle's Inhaler, and commences with a weak solution of creasote (two minims to the ounce of water). The beneficent action is mainly due to their astringent effect on the mucous membrane.—("Med. Times and Gaz.," Nov. 4th, 1876.)

Hooping-Cough.—Dr. Brinsley Nicholson recalls attention to the use of cochineal in allaying the spasmodic cough of pertussis. He gives it in a mixture with spirit and honey, the dose being one grain for every year up to eight grains for adults. He maintains that the remedy has a most prompt effect in directly calming the spasmodic hoop.—("Med. Times and Gaz.," April 21st, 1877.)

Croton Chloral.—Liebreich gives as much as sixty grains for a dose, and considers that while producing sleep it does not affect muscular tone, or interfere with the circulation or respiration. He thinks it applicable in heart disease. Dr. Yeo recommends it in the distressing night-cough of phthisis.—("Handbook of Therapeutics," Ringer.)

Ipecacuanha.—Dr. Ringer and Mr. W. Murrell have used inhalations of ipecacuanha wine as a spray, with considerable success in winter cough and bronchial asthma. The patients' ages varied from 45 to 72 years, and of twenty-five cases in which it was tried all but one derived considerable benefit. In a few days the dyspnœa was greatly improved, and the cough and expectoration markedly decreased. In one case the progress was tardy, but there was evident temporary improvement after each inhalation. In twenty-one of the cases the average number of inhalations required was 9·4, and the average number of days twelve, before the patients were discharged cured. In one case there were as many as eighteen inhalations, the lowest number was three. The longest case required twenty-four days, the shortest four. In administering the spray the mouth should be rinsed out after each pause in the process, or the quantity collected in the mouth and swallowed may give rise to nausea and vomiting. An ordinary spray-producer may be used, and, as a rule, the patient will bear at first about twenty squeezes of the spray, without nausea, becoming more tolerant afterwards. The patient should stop the nose with his fingers, and inspire deeply, trying to avoid arching the tongue. The inhalation should be used daily at first, in bad cases two or three times, later every other day, and even with still more extended intervals. In cold weather the wine should be warmed.

In one very severe case of bronchial asthma, accompanied with severe bronchitis, very great relief was obtained from the inhalation, but in another less severe case, even when diluted, it aggravated the symptoms. In using the inhalation it is advisable to begin with diluted wine.—("Ringer's Handbook of Therapeutics," new edit.)

Hyoscyamine in the Treatment of Disease.—Hyoscyamine rarely produces an exanthematous eruption. It occasionally (twice out of many hundreds of cases) gives rise to hæmatemesis. If small continuous doses are given in suitable cases it does not produce dryness of the tongue or of the throat, or interfere with the appetite, or give rise to nocturnal restlessness. It produces free and voluntary evacuations of urine in cases of retention, from spasm of the sphincter due to central nervous diseases. Small doses have a powerful effect in loco-motor ataxy and other conditions associated with sclerosis, characterised by frequent, interrupted, nervous discharges. Patients become, to a certain extent, tolerant of the drug.

It should be given with caution to the aged and to patients with arterial degeneration; it should be freely diluted. It should be avoided in furious mania with great excitement, and requiring artificial feeding for some time.

Hyoscyamine is very valuable in cases of aggressive and destructive excitement, in cases of chronic mania with special delusions of suspicion; in sub-acute or recurrent mania; in simple mania with agitation and obscure delusions and hallucinations; in the excitement and in the epileptiform seizures of general paralysis; in the epileptic status; but the most striking results are obtained in patients who wilfully or impulsively destroy their clothes, etc.—("Reports of West Riding Lunatic Asylum," 1876.)

The Use of Alcohol.—A "Medico-Chirurgical" reviewer reminds us that one of the most conspicuous of the primary actions of alcoh is a dynamic narcosis of the ultimate fibres of the nerves of sensation and vaso-motion. The sense of touch is relieved of its extreme acuteness, the muscular tone of the capillaries is relaxed, there is increased frequency of cardiac contraction and respiration; it also saves the tissues to some extent from destructive assimilation by diminishing oxidation. In this way it may be regarded as a "saving food." He considers that, in certain cases of bodily or mental fatigue, alcohol will soothe and sustain the system till the tissues have been renewed. Attention is called to the fact that, while physical labour is best endured without alcohol in cold regions, in tropical countries where the air is highly charged with moisture, cooling and relief is obtained from its use. It should not be taken except at, or near, the end of labour; or when the atmospheric influences are unusually depressing.

The meat extracts recommended by Dr. Parkes are, under ordinary circumstances, more efficacious than alcohol during prolonged labour. The reviewer lays stress upon the good effects of oatmeal in sustaining the body under physical exertion, and is inclined to think that cuca leaf may prove valuable. It should not be given too early in acute disease, not till the integrity of the nervous system and muscular fibre is markedly damaged. As a rule, it is advisable to give alcohol during convalescence. In chronic disease it should be given to sustain the system till local derangements are overcome by the general vitality. Alcohol should, when given, be administered periodically, for then it is most effectual with least risk. It is not to be given in small quantities frequently, but in one or two draughts daily. Stimulants should be fairly diluted and agreeable. Throughout the review repeated caution is given against using alcohol too freely.—("Brit. and For. Med.-Chir. Review," July, 1876.)

CLIMATOLOGY.

Extract from Registrar-General's Return for England for 1874:—

Total population (1871)	22,712,266
Total number of deaths (1874) ...	526,632

Deaths from :—

(A.) *Diseases of the circulatory system*—

1.	Pericardium	26,910	
2.	Endocardium	182	
3.	Muscular structure of the heart...	2,589	
4.	Arteries and veins	1,015	
		——	30,696

(B.) *Diseases of the respiratory system*—

1. Croup	5,010	
2. Laryngitis, etc	1,450	
3. Bronchitis and asthma	55,699	
4. Pneumonia	25,927	
5. Emphysema and other local lung diseases	5,721	
6. Pleurisy, empyema and pneumothorax	1,308	
		95,115

(C.) *General diseases*—

Scrofula with—

1. Tubercular meningitis	2,389	
2. Phthisis pulmonalis	47,769	
3. Hæmoptysis	1,589	
4. Tabes mesenterica	6,698	
5. Tubercular peritonitis	213	
		58,658

Phthisis pulmonalis—

Males	24,323	
Females	23,446	
		47,769

Hæmoptysis—

Males	1,064	
Females	525	
		1,589

Total deaths from chest diseases—

Circulatory system	30,696	
Respiratory system, other than phthisis	95,115	
Phthisis and hæmoptysis	49,358	
		175,169

or one-third the total number of deaths from all causes.

Total number of deaths from diseases of the lungs—

From phthisis and hæmoptysis ...	49,358	
And from other lung diseases ...	95,115	
		144,473

or more than one-fourth (the exact fraction is 3·64) of the total number of deaths from all causes.

Weather and Mortality in the British Islands.—Dr. Arlidge points out the fact that phthisis is a disease which exhibits small sensitiveness to weather in its rate of mortality; for its elevation above the average in no week exceeds 13 per cent.; whilst, on the other hand, asthma, which is chargeable with vastly fewer deaths, has a range of 126 above and 75 below its average clearly determinable by the state of the weather.

The great annual rise in the mortality from bronchitis takes place between the middle of October and the end of the year. Pneumonia also attains its maximum mortality in November and December.

The researches of Dr. Mitchell and Mr. Buchan demonstrate, what a practical acquaintance with disease will confirm, that meteorological conditions are only partially chargeable with the production and the termination of disease.—("Brit. and For. Med.-Chir. Rev.," July, 1876).

Altitude and Disease.—We are reminded by Dr. J. Macpherson that the ascent of great heights gives rise to symptoms such as—quickened and laborious breathing, amounting to dyspnœa on slight exertion; quickening of the pulse; bleeding from the mucous membranes of the head; violent headache; sleepiness; loss of the senses and the memory; mental depressions; thirst; nausea; vomiting; loss of muscular power. All these are relieved by rest, and renewed by exertion. These symptoms begin at a height of from 10 to 12,000 feet, and depend partly upon the diminished atmospheric pressure, partly on the deficiency of oxygen. Dr. Liebig thinks that the difficulty of inspiration is partly the result of more active elastic contraction of the lungs owing to diminished resistance of the air.

The influence of *increased atmospheric pressure* is exhibited by diminished frequency and increased depth of inspiration, with slower pulse, diminished dicrotism, subsidence of the pulse-wave, higher tension and relative fulness of the arteries, giving a feeling of comfort, an increase of muscular strength and power of endurance. There is, temporary, increased activity of molecular change, due probably to the increase in the quantity of oxygen. Rapid transition from an increased to a natural atmospheric pressure sometimes gives rise to symptoms such as epistaxis, paralysis of the lower extremities, etc., and those unaccustomed to the change, or plethoric, are most liable to be affected. These accidents are best treated by restoring the patient to the increased atmospheric pressure, and then gradually removing it. Increased atmospheric pressure is sometimes used to relieve asthma and bronchial irritation, and Jourdanet has relieved cerebral anæmia with it. The system is able gradually to accommodate itself to altered air pressure. Most people living near the sea-level are not affected by the fluctuations in the atmospheric pressure, but recent authors seem to have connected various nervous seizures, hæmorrhage from the lungs, and even sudden death in heart disease, with rapid fall in the barometer.

On the Himalayas, at an elevation of above 4,000 feet, it is probable that phthisis is rare, though inflammations of the chest are not uncommon.

At an altitude of 3,000 to 4,000 feet, in Kashgar, Mr. Bellew found scrofula and phthisis common.

In Mexico, at a height of 7,000 feet, asthma is occasionally met with; and at 2,000 feet catarrh and bronchitis are frequent, but phthisis is uncommon.

In the highest regions of Peru (over 11,000 feet) inflammations of the lungs are frequent; and there is a peculiar mountain-asthma called Mal de Puna, which has some analogy with sea-sickness. There is scarcely any phthisis, though it is common in the lower regions. In the elevated districts of Abyssinia (from 5,000 to 9,000 feet) scrofula is common and phthisis is occasionally met with. The monks of the Great St. Bernard, who live at an elevation of 7,500 feet, break down after seven or eight years, and then they have to descend to a lower level; asthma is very common amongst them. In the higher inhabited Alps pneumonia, pleurisy, catarrh, a contagious pleuro-pneumonia, bronchitis, and asthma are common. Tuberculosis and scrofula are absolutely absent from the Upper Engadine. At elevations of 3,000 feet phthisis is common, but in the higher districts it is rare.

In Munich and Madrid, both situate at heights approaching 2,000 feet, pneumonia is one of the most fatal acute maladies.

The general conclusion is that in mountain climates phthisis is rare. In Peru, wonderful benefit is derived from sending cases of phthisis up to the mountain sanatoria (10,000 to 12,000 feet). In the sanatoria of the East Indies, at a height of over 6,000 feet, phthisis sometimes does well. The Swiss and Pyrenean sanatoria, at elevations of 3,000 to 5,000 feet are suited for catarrhs, humid asthmas, and scrofulous conditions, and phthisis generally does well.—("Brit. and For. Med.-Chir. Rev.," Oct., 1876.)

The Geographical Distribution of Heart Disease and Dropsy; Cancer in Females; and Phthisis; in England and Wales (by Alfred Haviland).—In the decade 1851-60 there were 236,973 deaths registered from dropsy and heart disease; the ratio of females to males being 13·1 to 11·8 to every 10,000 persons living. During the first ten years of life the proportion of males was larger than that of females, but after this the mortality with females was always the higher till the age of 75, when the proportion in Wales again preponderated. After the age of 25 the mortality in both sexes nearly doubles itself every ten years up to the age of 75, after which there is only one-fifth increase, with an actual decrease after the age of 90 years. The mortality from these diseases is as a rule greatest in the thinly-populated districts, and especially in those parts of the coast that are precipitous and rock bound with but few inlets, and these at right angles to the prevailing winds and current of the tidal wave. Of the inland counties those most protected by natural surroundings from the prevailing winds and sea air have the highest mortality. The author considers that the great majority of heart diseases in England have their origin in rheumatism, and that rheumatism, endemic in many places, attacks children insidiously, often passes unnoticed, produces serious cardiac mischief, and those chronic joint affections so common among agricultural labourers advanced in life. He also believes that there is a rheumatic poison in certain localities which may be removed by the air being flushed, and perhaps chemically altered by the presence of ozone. As accessory causes of rheumatism he regards the low wages, low living, exposure to the chill and noxious early morning air which prevail in agricultural communities.

Mr. Haviland investigates the distribution of *cancer*, in women only. He finds it rather more than twice as common in females as in males, and that one forty-eighth of the total mortality in women is due to this disease. The mortality from cancer is lowest in those districts where the rivers flow through narrow channels, bordered by hard rocks, and where the land is freely exposed to the drying influence of the wind. In the Valley of the Thames, where inundations are frequent and the soil alluvial, cancer is most common.

In the same decade there were 508,923 deaths from *phthisis*, of which 269,918 occurred in females. As a general rule, those districts in which the mortality from phthisis is greatest have the lowest death-rate from heart disease, and are the regions least sheltered from the wind. London and the West Midland districts have a very low mortality of 24·9 to every 10,000 living, while Lancashire and Cheshire have a very high mortality. The next highest rate of mortality is in Wales. Anglesey has the highest ratio observed.

The reviewer does not give complete assent to the conclusion that the great majority of cases of heart disease in our country have their origin in rheumatism; and he points out that the diathetic and hereditary nature of rheumatism indicate that there are conditions favouring its occurrence beyond what is explicable by the geographical position of abode. Mr. Haviland's belief in the common occurrence of insidious rheumatism in early life as a frequent cause of heart disease is not considered to be established on a firm basis, and is not warranted by statistics.

Mr. Haviland attempts to show that opposite geographical conditions subsist between phthisis and cancer and between phthisis and acute rheumatism, but the reviewer points out that improper and insufficient food, misery and overwork, overcrowding and wretched abodes are accountable for numerous deaths from consumption quite independently of geographical conditions. Certain occupations, especially such as are associated with the production and inhalation of dust, are also potent causes of consumption; and to the operation of these causes rather than to the geographical position must we attribute the high mortality from phthisis in the textile manufacturing districts. So with regard to the more phthisical regions of Wales, the employment of the inhabitants in mining, coupled with unfavourable social conditions, is a more potent cause than the topographical features of the district.—("Brit. and For. Med.-Chir. Rev.," Oct., 1876.)

Influence of Sea Voyages.—Dr. Faber gives an interesting account of the influence of sea life and high air temperatures on the temperature of the body in health, as also on the respirations and the pulse.

The respiration appears to be the most constant of the three elements; very little increase was noticed with an air temperature of 100·5°.

The pulse decreased in frequency throughout the voyage to Australia and home by 4·5 beats. With an air temperature of 100·5° the pulse rose to 110, the body temperature being 99·4°.

The lowering effect of sea-life on the pulse and the temperature are indicated by the following facts:—At sea the body temperature had decreased by 0·51°; after ten days on land it had increased by 0·49°. At sea the pulse frequency had decreased by 4·5 beats; on land, after ten days, it had increased by 6 beats.—("Practitioner," July, 1876.)

Pathology of Sea Life.—Dr. Faber points out the fact that aneurisms are of frequent occurrence among seamen. The causes are to be found in the occupation of seamen which, in a great measure, consists of climbing up the rigging and especially pulling (*or rather jerking*) at ropes.—R. S. S.

A remarkable *disposition to hæmorrhage* was observed amongst the invalids at sea. This may be accounted for by the relaxing influence of the sea climate, particularly in the tropics.—("Pract.," Aug., 1876.)

Sea Voyages for Chest Disease.—Dr. R. Shingleton Smith directs attention to some misconceptions which exist, particularly with regard to the voyages to and from Australia and New Zealand. He considers that a stay in port for any length of time is not to be recommended, that it should be the object of the patient to spend all his time at sea, that too much is often expected from the outward voyage, whereas the voyage homeward seems to be the more beneficial of the two, and that the risks of rounding Cape Horn have been considerably exaggerated. He also points out the evils of being "laid up" at sea, and thinks it cannot be too strongly insisted on that if any active mischief exists the patient should not run the risk of illness at sea. Treatment by long sea-voyage (and it cannot be too long) should be advised in all cases of incipient lung-disease at the earliest possible period, but delay is superlatively dangerous.—("Brit. Med. Journ.," Sept. 16th, 1876.)

Consumption and Climate.—Dr. R. Payne Cotton, in commenting on Dr. Reeves' work on Consumption in Australia, points out that there cannot exist, either in one locality or another, any "specific" influence on consumption, and that any benefit derived from climatic changes must be due to other than specific influences. Whether the tubercular diathesis arises here or in any foreign climate, a change from that climate and from every circumstance of life connected with it; a rest from the work and conditions under which the disease has arisen; a new field of occupation and thought; and, especially, where all this is prefaced by a long sea voyage, as in the case of Australia, constitute the real and only active influences for good.—("Brit. Med. Journ.," Jan. 20th, 1877.)

Dr. W. H. Pearse communicated to the Plymouth Institution some statistics on the death-rate from consumption during the ten years 1861-70 in the different districts of Devonshire. He found that the death-rate from consumption throughout Devon, except in the two or three large towns, was less than the average in England and Wales generally. It was found to be low in some districts where the rainfall was very heavy, but the soil in these localities is light, and does not retain water for any length of time. The smallest death-rate, for men, in Devon was at Axminster on the new red sandstone formation. In the lace-making districts, Axminster and Honiton, the mortality among the women is much above that of men, the excess being considered due to the defective ventilation of the work-rooms. In the Dartmoor districts the mortality is low, and this part of the country might be utilised much more than it is by invalids in the earlier stages of phthisis.—("Lancet," Dec. 9th, 1876.)

NOTE.—Vol. IV. of Reynolds's "System of Medicine," consists of 794 pages "on Diseases of the Heart;" it has been, therefore, obviously impossible to attempt a complete abstract of its contents in these Reports.—(Assistant Editors.)

AUSTRIA AND HUNGARY.*

(*Report by* Dr. P. LANGER, Private Assistant to Professor Schrötter, *of Vienna.*)

ANATOMY AND PHYSIOLOGY.

On the Occurrence of Ganglion-cells in the Heart of the Craw-fish (by Dr. Berger, "Wiener Med. Chir. Rundschau," 1877, 7 Heft).—After having been treated with hyper-osmic acid, and especially with chloride of gold, characteristic cells could be isolated from the heart of a craw-fish by teasing, which equalled in size the medium cells of the abdominal spinal marrow. They have only been found in the posterior part of the organ, and this, when separated from the anterior half of the organ, continued its contractions. The corpuscle of the nucleus of the ganglion-cells of the craw-fish found by other authors was recognised in this case as a lens-like thickening of the wall of the nucleus.—("Sitzungsbericht der k. Akad. d. Wissenschaften in Wien," 1876, October Heft.)

Anatomical Contributions (by Dr. Zuckerkandl in Vienna).

I. *On the Trabecular Tissue of the Heart.*—The trabecular layer of the heart is remarkable in anatomical and clinical respects; it appears in two different forms, the larger portion of it is muscular, and the lesser one tendinous. The muscular portion principally forms the inner layer of the cardiac wall, and in the case of the left ventricle is developed from a muscular fascicle surrounding the auriculo ventricular ostium, from which the single thick fascicles have their origin. All take their course from the posterior cardiac wall, parallel in the downward direction, and are dispersed in small trabecula in the zone of the papillary muscles. In the sulcus between the left anterior cardiac wall and the septum cordis a series of thick trabecula is also found.

The fossa-like areolæ between the fascicles and their ramifications essentially augment the cardiac cavity and the expulsive power of the heart.

In the right ventricle, similar conditions are found, but the trabeculæ of the anterior wall are collected in a more completely parallel series. The same arrangement is noticed in the posterior wall of this ventricle, whilst the surface of the septum is flat.

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* In consequence of the illness of Dr. Langer the Reports for Austria, Hungary and Germany did not arrive till December, when it was too late for Dr. Dobell to give the time necessary for the elaborate revision which they required. The laborious task of correcting and revising them for the press was, therefore, kindly undertaken by Dr. *Brandeis*, who alone is responsible for the way in which this has been performed.

The superficies of the septum of the right ventricle is much richer than the left in isolated muscular fascicles and areolæ.

The second system of trabecular tissue of the heart is situated between the above-mentioned muscular fascicles. It is less in mass, more delicate, of a pale colour, and fixed only at each end, whilst the middle is free.

Most trabeculæ resemble the endocardium in their microscopical structure. These cords and threads are especially frequent between the branches of the papillary muscles and the adjoining wall. In the right ventricle the papillary muscles are weaker than in the left; they possess tendinous cords 12-15 mm. in length. The shorter they are the more delicate is their structure; they have been found as thin as a hair.

In the apex of the heart there are always numerous free cords, forming a network. The same structure, but of course smaller according to the degree of development, has been found in the heart of embryos and new-born children.

A third series of tendinous cords and threads, distinguished by their length, is composed of those fibro-muscular cords which are very frequent in the left ventricle, and show many varieties in respect to their form, situation, insertion, and thickness. Dr. Zuckerkandl mentions eighteen anatomical varieties, but he says they are not to be considered as abnormal, but as in congenital connection with the mechanism of the cardiac action. The author considers that the atrophy which attacks the exposed muscular fascicles in advanced age is a further cause of these cords and threads. They are important in a practical and diagnostic respect, because they produce noises when brought into vibration by the blood-waves. The author recommends that a series of exactly registered and detailed observations on patients should be made, as it is only by this means, in conjunction with the subsequent autopsies that it is possible to learn the acoustic signs of these threads. A starting point is given by the observation of Haniernik and by a case minutely observed by Professor Schrötter in the General Vienna Hospital.

In a man, aged 40, Schrötter heard, over the left ventricle, in addition to a systolic blowing murmur, a high-pitched almost whistling musical sound. It was supposed that this could only be caused by a fine thread-like cord, viz., by a tendinous cord stretched across the ventricle. This diagnosis was verified, in all its details, at the autopsy.

II. *On the Muscular Tissue in the Ventricular Surface of the Tricuspid Valve.*—The presence of muscular tissue in the auriculo-ventricular valves is fully described by G. Kürschner, in his careful investigations. This muscular layer is a continuation of the muscles of the auricle, and its function is to bend the valves during the systole of the heart. But besides the three systems of chordæ tendineæ, which are necessary for tension, expansion and fixation of the venous valves, the author has found in the tricuspid valve, in one-fifth of all examined cases, a muscular layer of different extent and thickness; mostly at the exterior valve, which is the largest. In opposition to the muscles described by Kürschner, are those described by the author, found on the ventricular side of the valves, and they are therefore to be considered as a continuation of the muscles of the ventricle. Dr. Zuckerkandl describes in detail the form and extent of these muscles. They are to be found mostly in the longest flap of the tricuspid valve, and their function is to prevent this from being more folded than the others during the systole. The curving of the valves is also augmented by the chordæ tendineæ, and so is the sail-like bulging of the easily movable tricuspid valve. In the heart of birds and mammals muscular layers are also met with in the right venous valve.

III. *Contributions to the Anatomy of the Ramifications of the Carotid Artery.*—Dr. Zuckerkandl draws attention to the anastomoses between the ramifications of the carotid and subclavian arteries and the vascular network formed by them, which is adapted to the establishment of a collateral circulation, but which is also often a source of persistent bleeding in operations on the neck. The communications of the thyroid and laryngeal arteries at the arytenoid cartilage, of the lingual at the os hyoides, and of the facial; also the anastomoses of the ophthalmic with the meningeal, suffice to bring nutritive material into the injured systems of the carotids. The branches of the carotids and subclavians also produce an inosculation of the vessels by ascending and descending ramifications. The author further mentions that the position of the carotids is disturbed in an abnormal degree by diseases of the neighbouring organs, as for instance, by tumours of the thyroid glands, which cover or displace the carotids. The common facial and the superior thyroid veins are often placed in front of the carotid. Finally, the author mentions five different deviations of the external carotid.—("Wiener Allgemeine Med. Zeitung," 1877, Nos. 16, 17, 18 and 20.)

Contributions to the Anatomy and Physiology of the Organs of Voice and Language (by Professor Stoerk).—In a paper read before the Society of Vienna Physicians, the author first demonstrated the anatomical relations of the more simply organised larynx of a sheep. He then gave his own opinion of the importance of the ventricle of Morgagni. It is only a reservoir for mucuous glands, which are required by the true vocal cords to lubricate them, and contains the folds which constitute the true cords. The sinus of Morgagni, and the ventricular bands do not serve to condense the waves of sound, but to augment the resistance of the true vocal cords in cases where they are required to endure a strong pressure. The author also explained that the vocal cords are stretched in a movable frame, which can be changed by certain external muscles from a circular to an oval form. By this mechanism, stretching of the vocal cords is effected, without the aid of the inner muscles of the larynx, which co-operate in the production of sound. The laryngoscopic observation of this change in the shape of the frame, led the author to the deduction that it must always be oval for production of high sounds—so-called head and falsetto tones—and circular for production of sounds of lower pitch, as, for instance, in common speaking, reciting, or singing with chest sounds. The circular form requires for its maintenance much greater muscular power than the oval. The inner muscles of the larynx act in accord with the exterior ones, especially with those of the outside of the neck, of the pharynx, of the isthmus of the fauces, of the soft palate, and with the muscular fibres extending partly from the Eustachian tube, partly from the styloid process to the thyroid cartilage, or its superior cornua. By the co-operation of all these muscles such changes of the position of the cartilages are effected as will produce the circular or oval form of the frame.

Stoerk further asserted that the opinion of the direct antagonism of the crico-arytenoideus posticus and crico-arytenoideus lateralis muscles is untenable. He also rejected the idea first held by Garcia, that in the production of high sounds the vocal cords are shortened. The laryngoscope shows quite the contrary.

Stoerk further explained that some individuals can produce high sounds simply by strong tension of the true vocal cords, while in their oval position, but in individuals who are not practised in producing high notes, the ventricular bands are pressed down upon the true ones, and so form a damper, so that the lateral parts are not able to vibrate. It may therefore be concluded that the sinus of Morgagni cannot support the act of phonation, and that it has nothing to do with the condensation of the waves of sound.

Another proof of this opinion is afforded by experiments both on the excised and on the artificial larynx. Stoerk made the vocal cords vibrate, and mixed smoke with the sounding air, in order to see the movements of the waves of sound. They always showed the same form, no declination into the sinus of Morgagni being observed.

The author found a further proof in cases where the ventricular bands have been partly retracted, partly cicatrised by syphilis, or a false vocal cord has adhered to a true one, or where no ventricular band existed. In another case a small gap of the false vocal cord led to the sinus of Morgagni, and yet the voice was not altered; and in cases of great weakness of the muscles, after exhausting disease, the false vocal cords lie directly upon the true ones, perfectly closing the entrance of the ventricle of Morgagni.

At the laryngoscopic examination of singers, when producing chest notes, it was seen that the whole breadth of the vocal cords enters into vibration, and the false cords are remarkably lifted up from the true ones.

Stoerk does not consider Helmholtz's view that the vibrations of the cords are quite the same as those of a metal tongue, quite acceptable, on account of pathological conditions. He, as well as other laryngoscopists, have observed that one and the same individual, by different tension of the two vocal cords, can produce *two different sounds* at the same time, an effect which cannot be obtained through different tension of two elastic cords in an artificial larynx.

Professor Stoerk has often observed patients who simultaneously sang a third or a fifth; and in cases of unilateral paralysis it occurs that, besides the normal sound, a second abnormal one is heard. This double sound is not to be confounded with diphthonia, to which Türk first drew attention.—("Mittheilungen des Wiener Med. Doctoren-Collegiums," 1877, No. 5.)

On Cough; a Lecture by Professor Stoerk (communicated by Dr. Pogrebinsky).—Stoerk is of the opinion that coughing cannot be produced either by irritation of the vestibulum laryngis nor of the free border of the epiglottis. Nor will irritation of the superior surface of the true vocal cords and of the ventricular bands cause coughing. The fact has been proved by clinical experience, that the most different pathological changes of these parts will not cause coughing.

The author considers that the mucous membrane between the arytenoid cartilages is the most sensitive portion of the larynx, and that the mucous membrane of the inferior part of the larynx is not susceptible of reflex action. In respect to the trachea, Stoerk states that when the canula of a hypodermic syringe pierces the anterior tracheal wall, only the irritation of the mucous membrane of the pars fibrosa of the trachea provokes coughing, and he supposes that the same is the case with the mucous membrane at the bifurcation of the windpipe.

He then treats of a few pathological changes of the mucous membrane of the respiratory tract, in which coughing arises. Above all, irritation of the fissure of the mucous membrane of the inter-arytenoid fold, first described by himself, excites coughing. Hooping-cough he cannot explain. In cases of pseudo-croup, the author thinks that swelling and relaxation of the posterior laryngeal wall, of the inferior surface of the vocal cords, and of the under part of the larynx, are the causes of cough.

Pharyngeal cough Professor Stoerk does not know, except so far as the mucous of the pharynx excites the larynx. Coughing may also arise from the larynx being closed on account of the epiglottis being drawn upwards and kept in that position by the enlarged follicles at the base of the tongue.

Absence of coughing in cases of chronic laryngitis and tracheal blenorrhœa is accounted for by the mucous membrane becoming gradually accustomed to the irritation, and finally degenerating. It is only when the disease reaches into the bronchi that violent attacks of coughing occur. Stoerk is of a contrary opinion to Heule and Edlefsen that coughing can be produced from the mucous membrane of the finer bronchi, and he adheres to Edlefsen's opinion that coughing arises more easily during expiration than inspiration; but he explains it by the greater friction of the air, as it passes out of the glottis, which is a little narrower at the moment of expiration, and he thinks that coughing would easily arise during inspiration if the glottis were to become narrowed at this time.

Among the occasional causes of cough the author mentions a bronchial catarrh sometimes unknown to the patient himself, marked anæmia, hysteria, chorea.

The existence of stomach-cough the author seems to admit.

Aphonic cough in anæmia, Stoerk thinks, is only due to disturbed nutritive conditions of the muscles, not of the nerve itself.—("Wiener Med. Wochenschrift," 1876, Nos. 25, 29.)

Contribution to the Physiology of the Voice (by Dr. Eduard Löri, in Buda-Pest).—The author was struck with the fact that bass-singers sometimes have the vocal cords shorter and tenors longer and broader. He measured the vocal cords and found the length, in women, from 14 to 19 mm.; in men, from 16 to 24 mm.; not only in sopranos and altos, but also in tenors and bass-singers, did he get longer and shorter measurements; so that he could not consider the length of the vocal cords an important factor in producing the higher or lower voice. In respect to the breadth, he sometimes found very broad vocal cords in tenors, very narrow ones in bass-singers, but, also, *vice versâ*. In the same ratio the different pathological conditions are in opposition to the opinion that the mass of the vocal cords alone should determine the highness of the voice, because in the same disease there may be at one time aphonia, at another time hoarseness or dysphonia, or only a higher or lower pitch of the voice. Nor has the structure of the other parts of the larynx a decided influence.

Now, if the so-called apparatus of the voice has not an absolute influence upon the voice, the author thinks we must look for it partly in the resonant apparatus.

The length and width of the trachea, its angle in relation to the thorax, the width of the mouth, magnitude and shape of the tongue, the width of the nostrils, etc., have no direct relation to the range of the voice.

There remain, therefore, only the different forms of the oral and pharyngeal chambers to supply a factor in producing the differences of pitch.

The author next communicates the differences of phonation found by him in the different pathological changes of form of both these cavities, and his observations on their relations to the voice. He found that the higher the roof of the oral and pharyngeal cavity, the lower was the voice. Singers with very flat, hard and soft palates have the highest voices, and those in whom the hard palate has nearly the shape of a Gothic window, have the lowest voices.

Dr. Löri further investigated the oral and pharyngeal cavity in boys during puberty, and found that these parts alter at this time in the same ratio as the larynx. The roof of the oral cavity becomes higher in boys having lower voices, and the pomum Adami more prominent.

The author confirmed his opinions by physical experiments. He thinks, therefore, that the human resonant apparatus may, according to its structure, only intensify a certain series of higher and lower sounds, and bring them to perception in acoustic purity; whilst, with other sounds, although they can be produced by the length and breadth of the vocal cords and by the power and action of the muscles, etc., it will not intensify but, on the contrary, weaken and disturb them in their musical purity.

The depth of the voice depends as much upon the resonant as upon the sound-producing apparatus, and if they agree in their anatomical structure, the voice will be a fine musical one.—("Pester Med. Chir. Presse," 1877, No. 3.)

On Neurin (by Professor Ludwig).—This drug, prepared by Professor Liebreich out of the brain as a free base, and lately successfully used in Vienna, in cases of diphtheria, is identical with the cholin prepared by Strecker from bile, and also with sinkalin prepared out of the seeds of the sinapis alba. All three have the same chemical formula $C_5H_5NO_2$.

Neurin can also be prepared from the yolk of eggs or from caviar and other animal substances. These contain a complicated chemical combination, lecithin-distearyl, glycerin-phosphoric acid with neurin. It is best obtained by a long chemical process from the yolks of eggs.

As long ago as 1874, Mauthner had found that solution of neurin dissolves fibrin and coagulates albumen, and reduces substances which are susceptible of putrefaction; therefore this preparation must be counted among antiseptic remedies. In consequence of this observation, Professor Ludwig recommended neurin for the local treatment of diphtheria, to several Vienna physicians, who obtained favourable results from it. The diphtheritic part was brushed with a 3-5 per cent. solution.

According to this theory, other ammonium bases also ought to act in a similar manner. Trials with tetramethylammonium-hydroxid and tetra-ethylammonium-hydroxid have given the same result.—("Mittheilungen des Vereins der Aerzte Nieder-Osterreichs," 1877, No. 10.)

Symptoms of Intoxication in a Child after the Administration of Tinctura

Veratri Viridis (by Dr. L. Fleischmann in Vienna).—To a well-developed boy, aged 3, suffering from broncho-pneumonia with very violent febrile symptoms (temperature 39·8 Celsius; pulse 140) the following mixture was given:—

℞. Mixt. gummos 60 grmms.
Tincturæ veratri viridis, gutt. sex.
D. S. every hour 1 teaspoonful.

In the evening, colicky pains; during the night, great restlessness and even delirium occurred. Next morning patient was soporose and suffered again from high fever; tinctura veratri viridis was continued every hour. At midnight he complained very much of soreness of the throat and great thirst. In the morning of the third day, a marked remission took place (temperature, 37·4 and pulse 80), but also convulsive motions for a short time. During the day the patient was very restless, and saw visions. Up to the evening of the third day the patient had taken, internally, 18 drops of tinctura veratri viridis. The night from the third to the fourth day was quiet, but during the whole of the fourth day confusion in speaking, and tremor of the fingers and hands occurred, which lasted until evening, after which time they did not return any more. The boy recovered very quickly.

The author shares the opinion of Professors Schrötter and Sidlo, that veratrin has no influence on the local process itself. Vomiting and diarrhœa he has never observed after it, and in general the mucous membrane of the stomach and intestines of children showed a certain tolerance to tinctura veratri viridis.

The disturbance of the sense of sight observed in this case had not been noticed before; all experimenters have said that the sensorium remained free. According to the author's opinion, these disturbances are due to the juvenile organism, and to its aptitude for cerebral symptoms; or the effect of the tinctura veratri viridis is not the same as that of the alkaloid obtained from the rhizome. The decrease of the frequency of the pulse is the first sign of the action of veratrin. If that is not noticed, and the tincture is continued, collapse occurs; for this reason the patient must be watched by the physician in order to find the exact moment at which to suspend this treatment.

The power of diminishing the pulse and temperature renders the tinctura veratri viridis an especially valuable remedy in the treatment of children, as its action begins much more quickly than that of digitalis. But, even more than in adults, the constitution of children must be considered in choosing this treatment. All strong and well-developed individuals with high fever are suitable; all weak children, and those with sub-acute fever, are to be excluded, for fear of collapse. The author considers the tincture of the American plant the most suitable for children, on account of its milder action. The effect manifests itself in children after five to twelve drops.—("Prager Med. Wochenschrift," 1876, No. 10.)

On Graphic Demonstration of the Heart's Movements (by Dr. Ott).—The author demonstrates a cardiograph constructed by Rothe, on the principle of the instrument of Burdon-Sanderson, and gives the results of experiments with the instrument. — ("Prager Med. Wochenschrift," 1877, No. 14.)

Remarks on the Doctrine of the Heart-Impulse (by Dr. Ganghofner in Prague.)—Case of a child with hiatus lateris sinistri thoracis congenitus. Professors Ritter and Eppinger have also observed this case, and communicated their respective investigations, which are mentioned in this report. Dr. Ganghofner made researches in respect to the heart's impulse, the patient being very well adapted for them. He mentions that since Cruveilhier's time, cases of chaism of the thorax or accidental wounds exposing the heart, have been used to study the heart's impulse.

The author enumerates no new facts, but his observations confirm those of Professor Skoda, made already (1847), on a child of two days old, but this case distinguishes itself from Skoda's, in which the sternum was wanting, whilst here there is an absence of the cartilages of the left ribs. Therefore a large part of the heart—the greater part of the right and left ventricle, and part of the right auricle—is lying covered only by the skin and pericardium. The chaism of the ribs extends from the third to the sixth rib, a space of four centimetres in length and two centimetres in breadth. In this chaism, during the motions of the heart all parts of it temporarily appear. During quiet respiration, at every systole a longish oval vertical tumor, protruding the skin, could be seen, rapidly moving from the upper end of the chaism downwards, and jerking upwards again with the systole. The swelling and protrusion, at the beginning of the systole, were rapidly followed by a sinking in of the integument, while the tumor moved downwards where the finger "felt a push" corresponding to the adhesion of the diaphragm.

When two fingers were placed in the chaism there was a distinct sensation that at every systole a swelling elastic body slid downward. It was evident that no lengthening, but a true locomotion downwards and upwards took place. At the inferior end of the chaism a sensation was conveyed as if the top of the heart were raised a little forwards; a rotatory movement could not be observed. The phenomenon of the heart's impulse the author considers, on the one hand, as the effect of the systolic hardening and change of form, and, on the other hand, of those powers which push in a backward direction, during the distension of the vessels, and cause those combined movements by which the heart is moved from the right, and below to the left and downwards, and is rotated round its longest axis from the left to the right side.—Osterreichisches Jahrbuch für Pädiatrik, 1876, II. Bd.)

Researches on the Differences of Tension between the Left Ventricle and the Aorta (by Dr. Gradle).—The author convinced himself by experiments on the hearts of dogs that the observations of Fick—viz., that the pressure in the left ventricle is less than in the aorta, are correct. He proved this on a model.

An india-rubber ball supplied with water from one side had a communication with an evacuating tube. Before and behind the ball a valve is placed, which can be opened in the direction of the current. The ball and the evacuating tube were also provided with a gutter 1 metre high. The ball represents the ventricle, and every compression of it a systole. The trial was begun after closing the free end of the aorta, with a series of repeated systoles. It was soon demonstrated that the water in the aortic-manometer was brought higher with every systole whilst it sunk in the ventricular-manometer. After a series of systoles the water rushed out of the superior end of the aortic-manometer, and it only reached to half the height in the ventricular-manometer. When the end of the aorta is open and the whole quantity of water, which can be thrown by a systole into the aorta, is emptied between one systole and another, the differences of the level cannot be observed; before and behind the valve the same state is restored at the beginning of each systole. But when the evacuating tube is narrowed, then at the beginning of the second systole and in the aorta a remnant of the tension of the first systole is present, and so the pressure of the aorta must increase. The greater the tension in the aorta the less is the increase at every new systole until it is = zero.

The author found, guided by many trials, that *cœteris paribus* the height of the water in the aortic-manometer exceeded that of the ventricle-manometer, the greater the difference the narrower is the emptying pipe, and the greater is the frequency of the systoles.

The differences of level between the two manometers of a system which is imitated from the arterial circulation depend upon—

(1.) The magnitude of the systole.

(2.) The celerity of the systole.

(3.) The lateral distance of both systoles.

(4.) The width of the emptying aperture of the aorta.—("Med. Jahrbücher der Gesellschaft der Aerzte in Wien," 1876, IV. Heft.)

Observations on Anomalies of the Taste, of Sensations of Feeling, and of Salivation in consequence of Diseases of the Tympanic Cavity (by Dr. Victor Urbantschitsch, 1876, Enke in Stuttgart).—The circumstance that in publications of affections of the tympanic cavity, alterations of the taste are only rarely reported, caused the author to inquire carefully into this object in order to discover the frequency and character of the anomalies of taste in ear diseases.

The examination of taste was made by means of salt, sugar, tartaric acid, and quinine. The posterior pharyngeal wall, the uvula, the arcus palato-glossus, the soft and hard palates, the back, the sides and base of the tongue, the frænum, and the mucous membrane of the cheek have been examined. It was specially noticed when the sensation of taste took place, not directly, but a few moments after breathing.

The intensity of taste is commonly the greatest at the corners of the tongue, the arcus palato-glossus, and soft palate, but less on the back of the tongue, on the mucous membrane of the cheek, and the posterior pharyngeal wall.

The faculty of tasting different substances varies very much in different individuals; instead of tasting, sensations of smelling sometimes arise. Loss of taste of the mucous membrane of the cheek and the soft palate very often is observed in children, but never in adults.

Fifty persons suffering from ear diseases have been examined, 6 suffered in both, 44 only in one ear, 44 cases of purulent otitis, 9 of polypus, and 2 of caries and necrosis have been observed. In 6 cases the inflammation was over, in 4 permanent perforation, and in 2 cases cicatrices of the tympanic membrane were found. Aberrations of taste occurred in 46 patients; in 4 cases of unilateral purulent otitis the taste was equal on both sides. The alterations on the diseased side occurred in 38 of 46 cases as a decrease, in 3 cases as an increase, in 5 cases as a partial increase and partial decrease. The decrease was proven by a diminished acuity of perception or by later appearance of the sensation (fifteen seconds) or shorter duration of them than on the healthy side. In some cases perception was completely wanting. In cases of bilateral affection, bilateral alteration of taste also was observed, but of different intensity. The decrease was observed not to be equal at all parts, it was also different with different substances, which suggests the existence of different kinds of nerves of taste.

The decrease of taste was united with decrease of feeling in 24 cases, feeling was normal in 22 cases. In one case normal taste, but complete anæsthesia of the corresponding half of the tongue was observed. These alterations are therefore not dependent on each other, but they exist simultaneously one beside the other.

The supposition that present changes of taste are produced by the diseases of the tympanic cavity is verified by the observation of two cases in which the altered taste on the diseased side became normal after cure. During injections into the ears, during extraction of polypi, in applying electricity, sensations of tasting have very often been observed. On the other hand, irritations of the mouth and pharynx can be felt in the ear. Through the plexus tympanicus not only does a communication exist between the ninth cerebral nerve and the otic ganglion, but also with the trigeminus, which receives the communicating ramus from this ganglion. As in both trunks tasting and feeling nerves have their course, it is probable that from the tympanic cavity, through action upon the plexus tympanicus and chorda tympani, changes of taste and feeling occur in the ramifications of the nervus lingualis and nervus glosso-pharyngeus. Besides the anomalies of taste, the author had also observed increased flow of saliva in operating for polypus or insufflating powders.—("Med. Chir. Rundschau Wien.," 1877, 2 Heft.)

Physiology of Breathing of Old Men.—Hutchinson has studied the laws of diminution of the vital pulmonary capacity up to the age of 65, and Geist up to 90. The pulmonary vital capacity decreases in men from the age of 35 about 1·5 cubic inch every year; in women the decrease is greater. The maximum of decrease is met with in men from 55 to 65, in women from 45 to 55.

The excretion of carbonic acid is also diminished. In regard to the fact that in a physiological condition the weight of the lungs is in equal relation to its capacity, Geist has tried to estimate the loss of weight during the involution time in the different periods of life from the weights and capacities of the highest age in average numbers.

At an age of 65 up to 85 the average weight of the lungs in man =1009 grammes; the average pulmonary capacity, 110·8 cubic inches (9 : 1), in a woman 789 grammes and 63 cubic inches (12 : 1).

According to this relation a decrease of the weight of the lungs of about 100 grammes would result from the 35th year in every following decade for both sexes, so that the lungs of an old man have shrunk from 1,491 grammes to 887, and that of an old woman from 1,330 to 756 grammes.

In consequence of this the excretion of carbonic acid also decreases, according to Geist's calculations, in a male from the 35th to the 93rd year of about 422 grammes, in a woman in the same time about 293 grammes. The admission of oxygen is also diminished in an equal ratio, as is the quantity of exhaled water, therefore serous inbibitions of the different tunics of the brain, the lungs, etc., takes place.

A change of a special kind in old age is the formation of *pigment* in the lungs, especially in their apices and the bronchial glands.

Frequency and Rhythm of Breathing in Old People.—The frequency of respiration increases in men from 16 up to 17 or 18, in women to 22 respirations per minute. Rhythm remains normal, and becomes only irregular if frequency is increased; sometimes respiration is augmented. Breathing and pulse have equal relation of frequency, upon one inspiration come 4 pulse beats. The senile alteration of the heart of old men consists of atrophy, or only simple senile anæmia, partial hypertrophy of the left ventricle, especially of its base, is observed. The semilunar valves are commonly thickened and insufficient, the coronary artery is ossified, or the right ventricle is dilated and the semilunar valves thinned. The colour is deep brown or yellowish, from the fatty particles deposited between the primitive fascicles. Sometimes the heart is placed towards the median line; it has a perpendicular position, the top of it turned forwards.

Pericardium is dry, difficult to remove from the heart; at several places studded with osseous plates.

Aorta commonly dilated at its origin; the pulmonary artery seems to be a little narrower, the innominate artery shortened.—("Wiener Med. Zeitung," 1877, Nos. 4, 5, & 6.)

On the Relation of Hæmoptysis to Pulmonary Phthisis (by Dr. M. Heitler).—The author asks, What influence has hæmoptysis upon the development of pulmonary consumption, and can hæmoptysis be considered an etiological factor of pulmonary phthisis? On this question the most contradictory views have been held until recent times. Before giving his opinion, the author makes an historical review; he mentions that already Hippocrates had admitted the possibility that blood emptied into the lungs may lead to pulmonary phthisis. The author also quotes the views of Laennec, Andral, and other investigators down to the present time. Virchow, and after him Felix von Niemeyer, were also of opinion that hæmoptysis may be the cause of pulmonary phthisis. The blood coagulates after hæmoptysis in the bronchi, causing pneumonic process. Traube and Skoda objected to this view. The author mentioned also the different experiments and conclusions of Waldenburg, Perl, Lipmann, and Sommerbrodt.

The author relates now his own clinical observations, and as an instance he names the hæmorrhagic infarctus, which never leads to the pulmonary consumption. But he cannot answer the question whether that, hæmoptysis occurring without palpable cause in a strong individual, quite healthy before, or happening in a person who has an aptitude to phthisis, will be the next etiologic moment for the consecutive consumption; and he thinks on the contrary that hæmoptysis is only an accidental manifestation, an initial symptom, whilst small deposits in the lungs have been present before hæmoptysis. The author narrates a very instructive case, and says that he adopts the view of those authors who do not consider hæmoptysis a productive factor of pulmonary phthisis.—("Pester Med. Chir. Presse," 1876, Nos. 42 and 43.)

On the Development of Pulmonary Phthisis and its Treatment by means of the Pneumatic Method (by Dr. Josef Szohner).—The author first relates those facts which were made known by the recent anatomical researches and microscopic investigations on the cause of pulmonary phthisis. He refers at length to the theories of Recklinghausen, Villemin, Virchow, Cohnheim, Rindfleisch, Friedländer, and Colberg on the inception of tuberculosis. According to all these authors the most essential and indispensable factor for the causation of tubercles is the dilatation of the small pulmonary vessels. In healthy individuals superficial respiration causes the dilatation of the small pulmonary vessels. The superficial respiration will find place if the function of single parts of the lungs is insufficient, as in a poorly developed thorax and muscles it is observed, in consequence of pathological processes impairing their elasticity, as for instance the adhesion of pulmonary pleura with the pleuro-costal layer or acute or chronic bronchial catarrh.

These relations are described in detail by the author, and he comes to the conclusion that, as long as the lungs possess their elasticity, and are aërated in such a ratio that every part is distended at every inspiration, the danger of pulmonary phthisis is removed, even in individuals suffering from scrofulous, purulent inflammation.

In respect to the treatment of pulmonary phthisis, the author considers the inspiration of condensed air the most successful, because the pulmonary hyperæmia is removed, more of oxygen is inspired, the respiration deeper and less frequent. The circulation of blood regulated, the inflammatory productions, and cellular elements stuffing the bronchioles and alveoli are resolved and absorbed. The author asserts that even in cases of isolated cavities in the lungs, if the process is not acute, the condensed air will produce an improvement in a short time.—("Pester Med. Wochenschrift," 1877, Nos. 1-4.)

On the Cause of Goître (by Professor Klebs).—Experiments were made upon a young dog brought from Salzburg, in which city dogs often have goître. The circumference of the neck of this dog amounted to 38·5 cm.; the right lobe of the thyroid gland had a length of 74 mm., a width of 42 mm; 10 cc. of water, in which navicula had developed for ten days, were injected by a hypodermic syringe into the right lobe, and 100 cc. of the same water were pumped into the stomach; four days later 15 cc. were again injected into the lobe, and 250 cc. into the stomach, and only similar water was given for drink; twenty-three days after the first injection the right lobe had increased in its length about 7 mm., the left 9 mm.

While under the influence of this water an important increase of the goître took place. The author considers the navicula the only cause of the disease.—("Prager Med. Wochenschrift," 1877, No. 3.)

Tuberculous Pneumonia in the 22nd Infantry Regiment (by Dr. Eckert).—November 2nd, 1874, the 22nd Foot regiment, the only one from Dalmatia, came into garrison to Görtz, and from this time a great number were affected with tuberculous pneumonia, and an uncommon mortality. The cause for this strange fact was erroneously ascribed to local conditions of climate and temperature, whilst the true cause was to be found in the nationality, and the slight resisting power of Dalmatians from their twentieth to twenty-third year of life. The distance from the native country, the complete change of the mode of life, the new garment and lodgings in barracks, the first rigorous discipline, seems to have a more unfavourable influence upon these young men, less developed recruits from Dalmatia, than on the troops of other nationalities. The men from Dalmatia have a great aptitude for diseases of the skin, to pleurisy and pneumonia, with transition into tuberculosis. Among the deceased soldiers 82·6 per cent belonged to the 22nd Infantry regiment, from Dalmatia, whilst, to the Artillery, only 9·7 per cent., and to the Landwehr only 1 per cent.—("Wiener Med. Wochenschrift," 1876, No. 48.)

In reference to the *Pathogenesis of Hooping-cough*, Dr. Anton Tschamer at Graz communicates his researches on this subject, and gives the opinion of Letzerich that vegetable organisms which exist in the sputa of children diseased from hooping-cough cause this affection.

The author found, on microscopic examination, more or less numerous white sharp-rounded corpuscles of the size of a needle-point suspended in the sputa. These corpuscles are to be found in the sputa of every advanced case of hooping-cough, and by their presence alone, the diagnosis is secured. The microscopic examination proves these corpuscles to consist of epithelial cells, a tender mycelium, net-like, ramified, and roundish oval sporules. In the nuclei of putrid oranges a black velvet-like deposit is often found, which shows, on microscopic examination, the same appearance as the corpuscles which are gained through development of the fungi in the sputa of children suffering from hooping-cough. The author collected these black deposits of the oranges and inhaled them, and he was attacked by a marked hooping-cough. The same trial was made with the same result by a workman. The author, therefore, considers these fungi the cause of hooping-cough, which observation is very important in respect to the further therapeutics of this disease. —("Jahrbuch für Kinderheilkunde," 1876, Bd. 10, Heft 1, 2.)

On Psoriasis of the Tongue and the Mucous Membrane of the Mouth, and its Relation to Carcinoma (by Dr. Nedopil, "Langenbeck's Archiv," 20 Bd.)—The author describes fifteen cases of carcinoma of the oral mucous membrane, in which that affection, called by the authors psoriasis buccalis or *plaques opalins*, preceded the development of the malignant growth.

All patients were men, and smoked very much. The author considers the irritation of the tobacco, and constitutional syphilis, the most important causes of buccal psoriasis. Treatment of this disease was always without success, the excision of a small portion would be advisable. It is not right to consider the psoriasis as an initial stage of carcinoma of long standing, it is only long continued irritation which leads at last, as every other irritation, to the development of cancer.

In respect to the anatomical relations, the chief characteristics are:

thickening of the epithelial layers, flattening of the papillæ, swelling of the mucous membrane by inflammatory infiltration, with formation of fibrinous tissue.—("Wiener Med. Wochenschrift," 1877, No. 7.)

DIAGNOSIS.

On the Perception of Feeling during Percussion (by Dr. Isidor Hein). —The author found that there is a great connection between the percussion-sound and the perception of feeling, so that a locality more resistant gives a higher sound than a less resistant one; further, that perception of touch already arises at the softest percussion, whilst sound is only produced by a shock of a certain strength, so that it becomes possible to determine more exactly the boundaries between the organs containing air and those which do not, than by dull and clear percussion-sounds.

In contradiction to the earlier views that perceptions of feeling are noticed as perception of resistance, Dr. Hein thinks that they are also caused by sensation of concussion of the body during percussion, and not only by the simple perception of the resistance of the body.

Dr. Hein entitles his methods of examination *Concussion's-palpitation*, and he thinks that this method in some cases may be more applicable than percussion on account of the easier and more delicate manipulation.—("Anzeiger der k.k. Gesellschaft der Aerzte in Wien," 1876, No. 4.)

On Double Sound and Double Noise on the Crural Artery (by Professor Bamberger).—Encouraged by Landois' treatise on "The Heart Impulse" the author made investigations on ten patients with insufficiency of the aortic valve. In all cases he found at the crural a violent swelling impulse, and on auscultation he heard at the first moment a sharp, short sound and a slight noise, at the second moment sometimes nothing, sometimes only weak whiffing noise, and sometimes a distinct sound, and then the rhythm was the following; first, a strong sound and a noise, then a pause, after that the second weaker sound, and then the pause again.

The sphygmographic examination of the pulse of the crural artery, made by meams of the apparatus of Marey and Sommerbrodt, showed a steep ascending line, and a sudden interruption in the middle of the descending line, and then an elevation, after which the base of the curve was reached again. In order to prove this phenomenon, Marey's sphygmograph was placed on the crural artery of one side, and on that of the other side a stethoscope, its plate connected with the tube through an elastic india-rubber pipe. During the steep ascension the first sound and the pathological noise was heard; when the top was reached at the curve, the pause took place, and the second shorter sound corresponded with the elevation of a dicrotic line.

Both phenomena are therefore synchronous and have the same cause. Bamberger considers the explanation of Traube, Gerhardt, and Landois quite untenable, and comes to the conclusion that only the theory of Duvoisier, of the running through and returning wave, is acceptable. The hearing this noise only in the crural artery has its cause in the circumstance that this vessel has a long course, in which none or only a few branches originate; which is more favourable for forming a strong returning wave than in other arteries.

This phenomenon is very important, and though the diagnosis of insufficiency of the aortic valve can be made with safety by the other symptoms, yet it has a great value when endocardiac noises cannot be heard on account of the extent and intensity of pericardiac friction.—(" Anzeiger der k.k. Gesellschaft der Aerzte in Wien," 1877.)

Symptoms of Incipient Pulmonary Phthisis (by Dr. M. Heitler, " Wiener Med. Presse," 1876, No. 52).—The author says that there is no absolutely sure symptom to be observed before the percussion shows the presence of single small deposits in the lungs, and therefore it is necessary to consider also other signs.

Symptoms, formerly considered suspicious, are a weak or sonorous or breathing sound, rough breathing, a lengthened strong expiration after soft inspiration—isolated rattling noises observed in circumscribed places for a long time. All these differences of respiratory sounds are valuable when heard over small places, and when different from those of the other side. A few localities are specially important, the comparison being more precise.

In normal cases the respiratory sound becomes weaker in the supraspinous region outwards from the vertebral column. It will be therefore conclusive evidence of incipient pulmonary phthisis if the respiratory sounds during expiration are more sonorous over these regions than nearer to the vertebral column. In a few cases of incipient phthisis a weak respiration is heard over one entire half of the thorax, combined with a state of relaxation of the lungs.

An important symptom, but rarely observed, is a rubbing pleural noise in the apex of the lungs, or the accentuated second sound of the pulmonary artery, and he thinks it is due to a state of relaxation of the lung. The *respiration saccadé*, a systolic murmur of the correspondent subclavian artery, Dr. Heitler considers less important.—(" Wiener Med. Chir. Rundschau," 1877, Heft 1.)

On the Influence of the Position of the Body upon the Results of Examinations of the Chest (by Dr. Emil Rollet, " Deutsches Archiv. für Klin. Med.," 19 Bd., 2 and 3 Heft.)—The author communicates the results of his investigations of the healthy body in respect to the circumference, of magnitude, of excursions of the thorax and the surrounding abdominal region, and in respect to the spirometric and pneumometric valves, and finally in respect to certain changes of the percussion-sound in the erect sitting and lying position of the body.

The measurements of the circumference of the chest and abdomen were made in five different planes.

The 1st plane was drawn through the cartilage of the fourth rib.

The 2nd through that of the sixth rib and the inferior end of the sternum.

The 3rd through the epigastrium.

The 4th through the umbilicus.

The 5th through the hypogastrium.

In a man 165 cm. high, the author found in the

1st plane of measurement	85·5 cm. standing.
	87·5 cm. lying.
	90·0 cm. sitting.
2nd plane of measurement	82·5 cm. standing.
	85·5 cm. lying.
	89·0 cm. sitting.
3rd plane of measurement	77·0 cm. standing.
	79·0 cm. lying.
	83·0 cm. sitting.
4th plane of measurement	80·0 cm. standing.
	82·0 cm. lying.
	85·0 cm. sitting.
5th plane of measurement	85·0 cm. standing.
	83·0 cm. lying.
	88·0 cm. sitting.

These changes of measurement are explained by the fact that the alternate shortening or lengthening of the abdominal cavity with equal contents depending upon the different inclination of the pelvis in different positions, requires a compensation of the differences of the circumference.

To state the changes of capacity of the thorax in different positions of the body, the author used the measuring apparatus described by Waldenburg. The respiratory capacity was stated to be smallest in lying, larger in sitting, and largest in standing.

The spirometric examination showed, in a healthy man, a decrease of the magnitude of respiration in sitting about 150·0 cc., in lying 500 cc. This fact is very important in respect to the ventilation of the lungs. In sitting, and more so in lying, the so-called residual air considerably increases.

Changes of the respiratory pressure have been examined by the mercurial manometer of Waldenburg. The expiratory pressure is, in healthy individuals in general, in lying, sitting and standing, greater than the inspiratory one, but both are smaller in lying than in sitting or standing.

Dr. Rollet has directed his attention to the fact also pointed out by Gerhardt, that the pulmonary sound near to the liver is higher in erect position of the body than in lying.

According to the author, this fact must be referred to the varying resistance and faculty of oscillating of the thorax at different positions of the body, and to the resonance of the cavity in lying.—("Prager Med. Wochenschrift," 1877, No. 10.)

On Graphic Demonstration of the Heart-Movements (by Dr. Ott).—The author demonstrates a cardiograph constructed by Rothe according to the principles of the instrument of Burdon-Sanderson. He further explains the single phases of the curve of the heart-impulse, he points out the influence which the change of respiration has upon the magnitude and distinctness of the single elevations in the different phases. To this he adds a few observations which are made from the act of breathing. The graphic image of the heart-impulse of a dying man was also shown, in which Cheyne-Stokes' respiratory phenomenon was noticed.

The author finally showed the curve of fifteen pathological cases of insufficiency of the bicuspid and aortic valves, and of both combined. In diseases of bicuspid valve, with increased pressure of the blood in the pulmonary systems, the backward beat prevails in the pulmonary artery, and therefore it forms also the apex of the curve. In diseases of the aortic valve the backward beat prevails, and in the case of both heart diseases being combined, the backward beat of the one prevails whichis more advanced.—("Prager Med. Wochenschrift," 1877, No. 14.)

PATHOLOGY AND MORBID ANATOMY.

Anatomical Contribution to the Communication of Professor Ritter's case of a Hiatus Lateris Sinistri Thoracis Congenitus (by Professor Eppinger).—The child died at an age of 4 months and 12 days. The post-mortem examination made by the author gave the following results:—

The thorax appeared asymmetric; the left side is a little flatter and narrower than the right. This flatness extends from the second as far as the sixth rib inwards to the left border of the sternum, between the insertions of the second to the sixth rib outwards to the inner osseous end of the third, fourth, and fifth ribs, which would form a straight line. The left upper extremity commences with a normal shoulder, but forms a stump 13·6 cm. long, conical downwards, and terminating in one normal finger. After removing the skin a great difference of the muscles on both sides of the thorax was found. The pectoralis major muscle was stretched as a thin muscular layer over the depression. Below that the inter-costal muscle as a second thin layer was found with characteristic tendinous stripes. The strong musculus serratus anticus major extended just to the border of the exterior corner of the hiatus. After removal of the intercostal muscles a flat and rather strong solid membrane was met with at the boundary of this excavation; this membrane is formed by the fascia endo-thoracica and the pleura parietalis having grown together. The cartilages at the third, fourth, and fifth ribs are entirely absent, and in their place the left corner of the sternum appears quite even and slightly concave. The anterior osseous parts of these three ribs terminate freely, and have a straight course. Their free border amounts to 31mm. Pericardium and heart normal.

The author concludes that this case is to be considered as an arrest of development in consequence of intra-uterine pressure, caused by a permanent pressure of the left upper extremity on the thorax, which opinion was also held by Professor Ritter. The author explained, as did Professor Klebs, the mechanism of the cause of this arrest of development and atrophic state in this way, that since there was but little amnious fluid, the fœtus became fixed with its left lateral thorax in a correspondingly large excavation of the gravid uterus, and in this way the left upper extremity was not only permanently held in a forced position, but this extremity could also exert its pressure upon the left thoracic wall.—("Oesterreichisches Jahrbuch für Pädiatrik," 1876, 1. Bd.)

Tuberculous Ulcer of the Tongue (by Dr. M. Nedopil, "Langenbeck's Archiv." 20. Bd). The secondary tuberculous ulcers of the tongue offer no diagnostic difficulties, but the primary one is often not to be distinguished from carcinoma, while syphilitic ulcers after a successful anti-syphilitic treatment can be excluded.

The course of the tuberculous ulcer is analogus to that of carcinoma. A little hard knot upon the corner or back of the tongue, often overlooked, falls to pieces and leads to formation of an impure ulcer with hard base, increasing slower than the carcinomatous ulcer. Cure can only be obtained by early extirpation; perhaps also the development of general tuberculosis may be prevented or arrested in this manner.

The author observed four cases in Billroth's Clinic, two were of the age of 32, one 68, and one 70 years of age. In three cases the ulcer was excised and cured in a few days. The part surrounding the extirpated ulcer contained miliary tubercles which were quite dense near to the free surface, but not so frequent in the parenchyma. A gradual reduction of the muscular fibres to a homogeneous, slightly nodular plasm, in which the muscular nodules are lying, seem to be the beginning of the process. Later on the primary neighbouring deposits become confluent, and only then are giant cells formed, from eliminated cells of the blood-vessels. Nedopil saw a few tubes filled with brown pigment. The development of tubercles seems to take place, partly by proliferation of the nucleus without formation of cells in its substance, partly by metamorphosis of the neighbouring tissue. —(" Wiener Medic. Wochenschrift," 1877, No. 16.)

On the rare forms of Disease of the Mucous Membrane of the Tongue and the Oral Cavity (by Dr. Schwimmer, of Buda-Pest). After a short historical review of those forms of diseases called by the different authors psoriasis, ichthyosis and keratosis, Dr. Schwimmer describes the symptoms, the occurrence, the course, and issue of these oral affections.

The disease begins in form of isolated red spots or plaques upon certain parts of the mucous membrane of the oral cavity, which are later turned into bluish-white, greyish silver-white. The first swelling and thickening, yields later to an atrophy of the surface. These pathological changes are notified by fissures and ulcerations of the mucous membrane.

The author saw two cases in their retrogression; other cases terminated with constant changes of the mucous layer, and have even been converted into malignant neoplasms.

The microscopic examination of these excised plaques of the tongue showed immense proliferation around the vessels of the corium, at the place of the greatest prominence, with simultaneous proliferation of the small cells of the Malpighian layer, and the papillary corpuscles were also excited to proliferation of cells. At points of progressive atrophy the papillary stratum is quite destroyed by the proliferating process.

The author further discusses the important differential diagnostic points: directs the attention to the incorrectness of the nomenclature mentioned in the literature; psoriasis and ichthyosis, and he proposes the expression, leucopathia buccalis.—("Pester Medicin. Presse," 1877, No. 9).

Bilateral Paralysis of the Recurrent Laryngeal, caused by an Aneurism of the Ascending Aorta and Arch of the Aorta (by Dr. Franz Klein.) A servant, aged 47, who suffered several years ago from acute rheumatism, came on account of violent palpitations of the heart and pains in the cardiac region, which sometimes increased to stenocardiac attacks. He was examined by Dr. Schnitzler, of the Vienna Peliklinik, November, 1874, and only an increase of the cardiac dulness was found. Three months later he returned on account of hoarseness and difficulty in breathing, and suffocative attacks, moderate cyanosis, laryngo-tracheal stenosis, respiration small, pulse in the left radial artery felt a little later than in the right one. At the sternum, dulness of the percussion-sound reaching from the second to the fourth rib. The first cardiac sound was dull. Laryngoscopic examination showed a complete immobility of the left half of the larynx, and but slight motion of the right vocal cord. During inspiration the right vocal cord approaches still more to the left one, standing in the middle, and therefore the glottis became still narrower. Dr. Schnitzler made the diagnosis of an aneurism of the ascending aorta.

At the autopsy it was found that there was a peripheric sacciform aneurism of the thoracic aorta and arcus aortæ with a secondary sac on the posterior wall of the arcus aortæ. Compression of the trachea and left bronchus, chronic endocarditis, complete adhesion between the heart and pericardium. The right inferior laryngeal nerve was apparently unchanged, the left taking its course behind the aneurismal arch of the aorta, was adherent to the latter, and divided into numerous fibres. Its marrow was completely degenerated.—("Wiener Med. Presse," 1876, Nos. 45, 46.)

Reports from the Franz-Josef Hospital for Children (by Dr. Neureutter and Dr. Josef Salmon, of Prague).

I. *Endarteritis Pulmonalis Diphtheritica* in a girl aged 3 years. The child was brought to the hospital with the statement that it had had fever and cough for two weeks past, and showed signs of a recent scarlatina. There was moderate ascites and morbus Brightii. In the first days of hospital treatment its condition improved, but in the region of the right trochanter a black gangrenous spot was seen. The child became feverish again, and variola set in, from which the patient died.

Autopsy showed: Variola, diphtheria, broncho-pneumonia, endarteritis pulmonalis diphtheritica, morbus Brightii, and acute swelling of the groin. Endarteritis in children is a very rare occurrence; it certainly arose, like the ulcer upon the trochanter, from embolism, in consequence of the preceding scarlatina.

II. *Pharyngitis and Gastritis Crouposa.*—A child of 6 months, received into the hospital with symptoms of enterocatarrh, broncho-pneumonia, swelling of the groin and liver, general atrophy, was somnolent two days before death, and suffered from pains in swallowing.

The autopsy showed: Hyperæmia of the meninges of the brain, broncho-pneumonia, pharyngitis, and gastritis, etc., which latter had its seat in the pylorus.

III. *Diphtheritic ulcer of the œsophagus* (*Ibidem*).—A girl of 6 years was received in the last stage of scarlatina, the fever continued; on the eighth day coma and swelling of the lymphatic glands on both sides of the neck, and perforation and emptying of fœtid pus from the right side occurred. No difficulty in swallowing. On the ninth day death ensued.

Autopsy showed: Hyperæmia of the brain, hydrocephalus, swelling of the pharyngeal mucous membrane. At the place of the tonsils deep loss of substance, pleuritic adhesions, lobular pneumonia, fatty degeneration of the heart. In the stomach there was coagulation of blood, which reached to the œsophagus. In the lower third of the œsophagus a circular loss of substance, partly of the submucous, partly of the muscular layer, was detected. This complication of scarlatina is very rare, and here a fatal hæmorrhage took place, through discharge of a diphtheritic eschar into the œsophagus.

IV. *Peritonitis in a Child suffering from a Cardiac Disease and Epileptiform Attacks* (*Ibidem*). A girl of 9 years was received, dying. She had suffered until her fourth year from eclampsia, and for three months past from epileptiform attacks, sometimes from dyspnœa and cyanosis, which symptoms had their cause in a cardiac disease. The autopsy showed insufficiency and stenosis of the aortic valves. Hypertrophy of the heart, without alterations of the other valves. The authors suppose the cardiac disease arose in the first year of life, and it was the origin of manifold diseases of other organs, by thrombosis.

V. *Caries of the Sacrum. Thrombosis Arteriæ Pulmonalis Sinistræ.*—At the autopsy of a boy aged 12, who had been suffering several years from caries of the sacrum, there was found pachymeningitis interna, thrombosis of the falciform process, and of the meningeal veins, miliary tuberculosis of the lungs, thrombosis of the pulmonary artery, The left pulmonary artery from its bifurcation was completely filled with a yellowish, loosely adherent thrombus, which probably arose at the first time, and did not give rise to any symptoms during life.—("Oesterreichisches Jahrbuch für Pädiatrik," 1876, 1 Bd.)

Communications from the Hospital for Children in Buda-Pest (by Dr. Wittmann).

Endocarditis with Multiple Embolics of Arteries.—The author verifies the experience of Kirke, See, and Roger that in all cases of chorea in which the heart is also diseased, acute articular rheumatism has preceded it. The latter is more rarely observed in children than in adults, but with a greater percentage of cardiac affections. The author relates a very instructive case of chorea with consecutive cardiac affection. A girl, aged 11, suffering periodically from chorea for four years past, was brought into the hospital with acute affections of the joints, hypertrophy of the left ventricle, systolic murmur at the base of the heart, accentuation of the second pulmonary sound. The pulse is not to be felt at all in the left extremities, neither in the crural artery, nor in the radial. Patient died with symptoms of pulmonary œdema after clonic spasms in the right extremities. The autopsy showed, half an inch from the origin of the right arteria fossæ Sylviæ a whitish-red condensed thrombus, 4‴ long, completely filling the calibre of the artery. In the left artery there was a similar thrombus, a little longer. The heart was hypertrophied. At the free corner of the bicuspid valve there are red, moderately firm vegetations of areolar tissue. In the left subclavian artery there is a partly yellowish partly red thrombus half an inch in length, a similar one in the left crural artery, and in the superior mesenteric artery. In the spleen, kidney, and in the right popliteal arteries similar coagulations were found.

Embolism of Fat in the Pulmonary Arteries (by Professor Heschl).—This was found in a man who, in consequence of a fall, had received a fracture of the left femur, and who died four days after without fever or other general symptoms. At the post mortem the lung was found of normal appearance, but at the microscopic examination the capillaries and the small pulmonary vessels were found filled with fatty matter. Heschl said that a similar condition has been found by other authors after lesions of the bones connected with laceration of the marrow, and in some cases also embolism of fatty corpuscles into the cerebral arteries.—("Anzeiger d. k. k. Gesellschaft der Aerzte in Wien," 1876, No. 3.)

On a Cylindroma of the Lungs (by Professor Heschl).—In 1856 Billroth first characterised cylindroma as a tumor in which singular crystallic, clear cylinders are to be found, with knotty excrescences, forming a network through which another system of yellowish cylinders is drawn. The single divisions of this tumor are surrounded by areolar tissue, and at this time cylindroma was only observed in the orbit and antrum of Highmore, and was very apt to re-form, but it was not determined whether the growth belonged to the carcinomatous tumours. This definition of cylindroma underwent many alterations, and at present three very different growths are designated by this name. Professor Heschl related a case he would like to name "true cylindroma," but which differs very much from the growths mentioned before. It is a mixed tumor of fibrous and homogeneous areolar tissue, of true osseous and vascular nature in connection with the finest ramified homogeneous cylinders.

At the autopsy of a man aged 72, a hard elastic conical appendix, of the size of a fist, was found in the inferior lobe of the right lung. This tumour was divided, by areolar septa, into eight oval lobules of the size of a hazel nut. The anterior soft lobe consisted of roundish and spindle-shaped cells and vessels, the posterior one, besides the same kind of cells, also of concretions, and between them colloid substances. In the centre, elastic fibres, ramified and distinctly limited; here and there were traces of blackish pulmonary pigment; nearly all kinds of areolar tissue were represented. The author calls this tumour *Cylindro-Desmoid.*—("Wiener Med. Wochenschrift," 1877, No. 17.)

Pyo-pneumothorax Lateris Sinistri (by Professor Ritter, of Prague).—The author reports a case of pyo-pneumothorax, in a weak child of 7 years, with the well-known symptoms. A remarkable circumstance was that in the dissecting-room no trace of an opening was found. The author explains the cause of this. It was pyo-pneumothorax from a hæmorrhagic infarct.—The patient suffered from a hæmorrhagic diathesis, with gangrene, in consequence of which a softening of the infarctus and a rupture of the pleura (pleuritis) followed. The seat of rupture was rapidly closed, and the lung was so compressed that it could not be discovered fifteen days after.—("Prager Medic. Wochenschrift," 1876, Nos. 24-25.

Analysis of a Gas in Pneumothorax (by Dr. Kretschy).—The analyses heretofore made have shown nitrogen, carbonic acid and sulphuretted hydrogen, traces of oxygen. In this case there was, besides those named, also marsh gas (sumpfgas). A woman, aged 28, had while in childbed pleuritic effusion; thoracentesis was performed, ten days after it pneumothorax with great cyanosis set in. The patient breathed only with the right lung. The left one is shorter and more prominent on the anterior and lateral side. Heart is displaced. The great dyspnœa, at last, caused the author to make an incision upon the most prominent point, and to withdraw the gases by means of Dieulafoy's apparatus. Patient died the following day. The gas was examined in Professor Schneider's laboratory. The portion of gas put into the combustion tube and free from carbonic acid and SH_2, burnt by means of oxygen and hydrogen gas, and proved to be marsh gas (sumpfgas).—("Wiener Med. Wochenschrift," 1876, No. 32.)

Occlusion of the Right Innominate Vein by a Substernal Goître (by Dr. Kretschy, Assistant to Professor Duchek's Clinic).—The author says that Prof. Duchek was the first who made the diagnosis of this condition from clinical observations. In his Handbook he has recorded thirty-three cases of stenosis and occlusions. He further mentioned that authors have found important symptoms in the collateral circulation, and anastomoses between the left and right jugular veins.

Dr. Kretschy observed the following case:—A man, aged 61, suffered from a goître since his twentieth year. For the last five years he suffered from palpitations and dyspnœa, and the neck became very large. For a few months the patient had the sensation of formication in his left inferior extremity, and since four weeks the left superior and inferior extremity is paralysed. On his arrival in the clinic he was very dyspnœic, without dropsy, but no enlarged struma was to be seen; the right jugular vein was dilated, the left jugular vein was only half as large. They communicated with another by means of a transverse branch. In the region of the right clavicle a convolution of varicose veins was seen, which communicated with the right jugular, and extended from the right parasternal line in three slight arches to the left side, and formed a rete venosum at the third rib. On pressure upon the epigastric vein a turgescence of the superficial veins above arose, whilst the veins below collapsed completely. The blood current had therefore a reverse direction. The patient died soon, and the dissection made by Dr. Chiari showed—medullary carcinoma in a substernal goître with secondary knots at the fourth and seventh ribs, and at the liver; compression and obliteration of the right jugular; compression and hyperæmia of the lung.—("Wiener Med. Wochenschrift," 1877, No. 1.)

Atrophic Kidney; Hypertrophy of the Left Ventricle; Sudden Death through Rupture of the Aorta (by Dr. Otto Kahler). — A charwoman, aged 45, was unwell since her thirty-seventh year, in which year she was delivered of her first child. Five months before arriving at the hospital, dropsy, headache, palpitations and dyspnœa, and sometimes diminution of the field of vision were noticed. The clinical examination showed enlargement of the heart, corresponding to the left ventricle. At the base of the heart the first sound was dull, and also a slight blowing noise, and a clapping second sound was heard. Over the sternum, from the third to the fifth rib, two sonorous rasping noises were observed. Pulse hard and jerking. Urine contained much albumen, lymphatic corpuscles and detritus. Diagnosis: Atrophy of the kidney and hypertrophy of the left ventricle. The autopsy confirmed this diagnosis. As the cause of sudden death, an 8mm. long oblique rupture of the ascending aorta was found, as well as a dissecting aneurism, hypertrophy of the left heart, interstitial nephritis, granular kidney, rigidity of the arteries.

The author thinks that a clinical observer can diagnose an imminent rupture of the aorta when, besides slight palpitations, noises are also to be heard at the sternum, at the level of the third rib, without symptoms of incipient pericarditis. The noises have a scraping character, are synchronous with the true heart-sounds, and are distinctly increased by pressing down the sternum.—("Prager Med. Wochenschrift," 1876, No. 28.)

An Obliteration of the Vena Cava Ascendens by a Contracting Cicatrix (by Professor Eppinger).—Only six cases of obliteration of the vena cava inferior have been published until now, in five of which a thrombus was the primary cause. The following case the author reports:—A woman, aged 52, had a severe scarlatina at 12 years of age, an intermittent fever at 25, an icterus at 45. From this time she suffered from piercing pains in the region of the liver. At the last time the circumference of her abdomen was enlarged, and a general debility and œdema of the lower extremities took place. At her arrival at the hospital, ascites, dropsy of the lower extremities, and a collateral circulation, enlarged liver and spleen were diagnosed. Paracentesis abdominis was performed twice. After the second one peritonitis set in, and, twenty-four hours later, death occurred.

Autopsy showed the vena cava inferior completely obliterated twenty one mm. distant from its entrance into the right atrium, and forming at this place, a 7 mm. long fibrinous cord, the size of a quill. The liver has a knotty feel, peritoneum thickened, fibrinous cords accompany the veins into the gland, and a circular hard cicatrix has its place at the posterior corner of the left lobe of the liver, by which a piece of the vena cava ascendens is entirely encircled. Diagnosis: Interstitial hepatitis, obliteration of the inferior vena cava, primary cancer of the liver.

Professor Klebs related also in his book a case of hereditary syphilis in a boy 12 years of age, in which a similar incipient obliteration of the cava inferior in the same locality was observed. A similar cord, extending from a gumma, encircled this vessel and narrowed it to the half of its normal size.—("Prager Med. Wochenschrift," 1876, Nos. 39, 40.)

CLINICAL MEDICINE.

Obliteration of the Vena Cava Ascendens by a Thrombus (by Dr. Otto Kahler).—Encouraged by the communication of Professor Eppinger, on the same subject, the author reports a similar case, which was already positively diagnosed during life. A man, aged 62, suffered from œdema of the lower extremities. Since two years he observed dark blue cords on his abdomen; since a half-year dyspnœa; thirteen years ago he had typhus fever, and in consequence of it phlebitis of the saphena vein. On his arrival in the hospital an extended network of veins was found on the anterior surface of the trunk, in which the blood-current was going upwards. The turgescence of the vessels decreases during inspiration and increases during expiration; nowhere are pulsations or noises to be detected. In this case the diagnosis of an impediment of circulation in the vena cava ascendens can exactly be made through the want of dilated veins of the head, neck, and the upper parts of the thorax, and through the direction of the blood-current. It is more difficult to determine whether there is merely a narrowing or a complete obliteration, and if the latter of which kind it is. The author thinks that there is a complete obliteration, on account of the extent and completeness of the collateral circulation, and on account of the long duration of the process.

In respect to the etiology, he thinks that in consequence of an acute febrile disease, a thrombus was formed at the venous valve of the saphena or crural vein, which later, and by degrees, has been pushed into the vena cava inferior, where first a parietal, later an obstructive, thrombus was developed.—("Prager Med. Wochenschrift," 1876, No. 43, 44.)

On Diphtheria with regard to the Character of Epidemic in Vienna, 1876-77 (by Dr. Becker.)—The author pointed out that this epidemic disease had increased in severity during the last ten years. The qualities of the contagion are—

(1.) The diphtheritic contagium seems to be more fixed, adherent, than the other exanthems.

(2.) It shows a striking resistance to the conditions of soil and temperature.

(3.) It retains the infectious quality a long time.

Unfavourable varieties of diphtheria are to be considered—the diphtheritic croup and the asthenic diphtheria. The croup, complicated with typhus fever, is remarkable; in this the stenotic character of the croup is less to be observed than the symptoms of the pyæmia. In cases of asthenic diphtheria the local affection is not highly developed, and it has often ceased, and yet the grave general affection led to fatal and sudden collapse, the causes of which have not yet been explained.

In respect to the treatment, the author made the following observations:—The membrane was scraped off in two cases, in both with an unfavourable result. Cauterisation with nitrate of silver does not at all retard the local affection; on the contrary a noxious influence was observed. Lime-water is useless as a fluid for inhalations, becoming neutralised through the expiratory air containing carbonic acid. The experiences made with neurin the author communicates as follows:—

(1.) The resolvent effect of neurin upon the exudatious matters is greater than all other remedies. (2.) The fœtor ex ore rarely increases after applying this remedy. Besides, it was remarkable that the general state of health was more satisfactory, notwithstanding the highly developed local affection. Whether that is due to the action of neurin, further experiments must show.

The use of ice is to be left off when anæmia of the pharyngeal mucous membrane occurs, as then improvement can only take place by producing discharge of the matter by the use of warm. This is the principle of Oertel's mode of treatment, who uses inhalations of hot water. To combat the fever quinine should be given; and, later on, the salicylate of soda may be used.—("Mittheilungen des Vereines der Aerzte Niederösterreichs," 1877, Nos. 3, 5, 6.)

A Case of Diphtheria with concurrent Paralysis—Cure (by Dr. Tymaczkowski).—On the fourth day after beginning of the disease symptoms of paralysis of the muscles of the eyes, diplopia and strabismus divergens, occurred in a strong woman, aged 28. On the fifth day symptoms of paralysis of the lower extremities, decrease of sensibility of both hands; on sixth day paralysis of the thoracic muscles, dyspnœa; respiration was only possible by abdominal pressure. On the seventh day the paralysis of the bladder and sphincter followed. The symptoms of paralysis of the different organs successively disappeared. It is remarkable in this case that the patient by daylight saw all things double; with artificial light normal.—("Wiener Med. Presse," 1876, Nos. 31, 32).

Contributions to the Knowledge of Diphtheritic Localisation (by Dr. Wutscher).—To prove that diphtheria is a general disease of the blood, which can also occur without localisation in the pharynx, the author relates a case of diphtheria with localisation on the toes. In a village in which an epidemic of diphtheria occurred, he observed, besides the common affection of the pharynx, also vesicles, the size of a hazel-nut, on the toes, of a white, then a dirty grey blue colour, which emptied putrid fluid on the second or third day, and were followed by gangrenous ulceration. He observed such affections of the toes in children without affection of the pharynx, as in a girl of 8 years, who had such ulcers on the second and third toe of the right, and on the third and fourth toe of the left foot, and also a gangrenous ulcer round the anus. The inguinal lymphatic glands were infiltrated on both sides. The girl died on the eighth day with symptoms of septicæmia.

In another family the author found a boy with slight diphtheritic affection of the pharynx, and gangrenous ulcers of the foot; and in a third family a boy with the same affection on the foot, and without any affections of the pharynx.

In a neighbouring village the author was told of four boys who died from diphtheria, and had such ulcers on the toes. In both villages the true pharyngeal diphtheria preceded as epidemic, and only in the latter were the affections of the toes noticed.—("Wiener Med. Presse," 1876, No. 49.)

Croup of the Larynx in a Child aged ten months (by Dr. Winiwarter).—Until now so young an age was considered a contraindication for performance of tracheotomy, because the experience gained in hospitals for children showed the younger the child the more hopeless the cure, with or without tracheotomy. But the author thinks that just in respect to the indications of tracheotomy in children, it is very necessary to exercise discretion.

A child aged 10 months was suffering from diphtheria pharyngis. Two weeks later it became dyspnœic, in consequence of laryngitis crouposa. Tracheotomy was performed on the child, which was almost asphyxiated. The canula could be removed seventy-three days after operation.—("Jahrbuch Kinderheilkunde," 1876, Bd. X., Heft. 1, 2.)

A rare Case of Diphtheria (by Dr. Dubay, of Buda-Pest).—A child aged 8 years was taken ill with a severe pharyngeal diphtheria. Recovery in eight days; afterwards a series of paralyses took place, in the following order: paralysis of the soft palate, stuttering, the faculty of speaking was lost for some time, facial paralysis, that of the superior and inferior extremities, of the bladder and rectum. All symptoms improved, only debility of mental functions remained.—("Gyogyaszat," 1876, Nos. 35, 36.)

Remarks on Croup and Diphtheria (by Dr. Edward Löri, of Buda-Pest).—The author has observed 300 cases, and made laryngoscopic examinations of all. Twenty-one have been adults, all others children.

He asserts that he has also examined children under the age of 2 years without difficulty. He introduced the left index-finger behind the posterior molars between the angle between the inferior and superior maxillary bone, the four other fingers depressing the inferior maxilla. Vomiting during this examination he considers very useful, as much mucous, even membrane, is expectorated. He objects to the view that inflamed tissue is more suitable for the reception of diphtheritic sporules. In the *initial state* of diphtheria, he never found hyperæmia; he often got negative results of examination, and twelve hours later diphtheritic spots were found. It is very difficult to distinguish the simple follicular tonsillitis from croup and diphtheritis. *Duration* of diphtheria is very different; the longest duration was six weeks. On the other hand death sometimes occurs a few hours after beginning of the disease. The locality of development of the diphtheria shows no rule. Among the complications the author only considers catarrh favourable, as the discharge of the membrane is relieved by augmented secretion. If moist râles are to be heard, a good issue is to be hoped for. A few times the author observed death under sudden collapse in cases of slight pharyngeal diphtheria, with normal pulse and temperature. He observed diphtheria both in old men, and also, but rarely, in children of a few days; he saw children under 12 months recover. In respect to therapeutics, he does not know of a single sure remedy, and he considers the laryngoscopic examination and irritation of the pharynx the best emetic.—("Pester. Med. Chir. Presse," 1876, Nos. 31-34.)

A Case of Genuine Acute Bronchitis Crouposæ (by Dr. Hajek).—A strong man, who suffered every spring from bronchial catarrh, was again seized with a similar attack, but on this occasion he expectorated white corpuscles; he had also pains in the chest, and oppression during the last three days. The collected sputa showed larger tubular ramifications, of the length of 3½ inches. The expectoration of the matter lasted eleven days, after which time coughing and difficulties in breathing ceased. The peculiar noises and meliorations for sleeping described by other authors, Dr. Hajek could not observe.—("Weiner Med. Presse," 1876, No. 26.)

On a Case of Bronchial Croup, and a few Remarks on Laryngospasm and its treatment (by Dr. Sidlo.) A man, suffering for two months from laryngitis, awoke suddenly with great oppression, cough, and dyspnœa; percussion normal; at auscultation all over, whistling and hissing respiratory noises were heard. Next day dyspnœa increased to cyanosis. On the fifth day several attacks of hæmoptysis, cough, and asphyxia, which was repeated every day for a week, after which all symptoms decreased. The patient coughed up large convolutions of tubular ramified coagulations, the larger of which were hollow. The whole process had one month's duration. Simultaneously with this case of acute bronchial croup there was also croup of intestines. In this case four periods have been distinctly observed:—(1.) Period of permanent dyspnœa; (2.) of hæmoptysis; (3.) of characteristic expectorations; (4.) of a slight bronchial catarrh.

Dr. Sidlo endorses the opinion of Biermer, Riegel, and Chvostek, that even considerable pulmonary bleeding in cases of bronchial croup is of no serious importance. Moreover, he thinks that it may be of favourable influence upon the local process, because a decrease of swelling of the bronchial mucous membrane occurs, and the patient himself feels relief after it.

Then Dr. Sidlo speaks of laryngospasm and its treatment; he refers to nine cases of his own observation. The first case in a soldier, aged 29, commenced with an acute pharyngitis and laryngitis, and such severe disturbances in breathing—even trismus and opistotonus, with unconsciousness—that they were about to perform tracheotomy. Injection of a weak solution of nitrate of silver, however, restored the man in a few days. In four other similar cases the patients were cured in the same way and time. Four had longer duration. In five of all cases, acute laryngitis, and in four chronic laryngitis were proved. In all cases the supposition of an increased reflex irritability was justified. The treatment always consisted in injections of solution of nitrate of silver, once daily; in cases of acute laryngitis, of a solution of 0·5 : 40·0; in a child 0·2 : 40·0; in cases of chronic laryngitis, 1·0 : 40·0; and the author recommends this treatment in all similar cases.—("Wiener Allgemeine Med. Zeitung," 1876, Nos. 29—32.)

On Bronchitis Crouposa (by Dr. Chvostek).—Cases in which the croupous process is limited to the bronchi are very rare. Biermer has collected fifty-eight. In recent times eight cases of other authors and three by Dr. Chvostek himself have been published.

Etiology.—Bronchitis crouposa occurs more frequently in men than in women. Bronchial catarrh commonly precedes it; in rare cases tuberculosis. Hæmoptysis, which often occurs, is sometimes erroneously considered a symptom of pulmonary consumption. It occurs more frequently in weak, emaciated individuals. According to Oppolzer, anomalies of menstruation and pregnancy seem to be favourable to its production. In the south it is rare, in Switzerland and the Netherlands very frequent. Excessive cold has proved an infrequent cause. It occurs mostly in spring, specially in May.

Diagnosis and Cause.—Expectoration of dendritic ramified coagulations. According to Liebert, also an acute fibrinous bronchitis is observed without expectoration of fibrinous coagulations. Hæmoptysis originates in rupture of blood-vessels in consequence of severe attacks of coughing. Dyspnœa is rarely or not at all present in chronic, but very great in acute cases. Cough has the well-known strange sound. Voice normal. Pains in the chest are rare. Dropsy was observed only in one case. Fever, always in acute cases. The physical symptoms are rarely characteristic, they are those of bronchial catarrh. Some authors have observed a strange dry noise. The patients commonly recover. Duration, three to four weeks. The bronchial croup seems to have its beginning in the bronchi of medium size, from which it extends to the finest ones. Bronchial croup is often overlooked, when much blood is expectorated which covers the fibrinous coagulations.

In respect to the therapeutics the loose-coagulations must be removed by means of emetics, and the coagulations must be loosened and dissolved by means of inhalation of hot steam or lime water, lactic acid or alkalies.—("Wiener Allgem. Med. Zeitung," 1876, No. 20, 25.)

Voice without Vocal Cords (by Dr. Jelenffy, of Buda-Pest).—After a recapitulation of relations and symptoms under which the false vocal cords perform the functions of the true, the author came to the conclusion that the ventricular bands fully deserve their name from a physiological point of view. The author relates the interesting history of a girl who came under his observation with a complete absence of the true vocal cords. At the anterior angle a large cicatrised tumour was to be seen. During phonation, the remainder of the true vocal cords and the ventricular bands approached each other, but a space of one-third of an inch remained. The patient very much desired to have a voice. The author tried to restore the flexibility of the thyroid cartilage, by removal of the cicatrised tumour at the anterior end of the glottis by galvano-cautery; further, to stimulate their approximation, the false vocal cords, and at last the muscles were strengthened by electricity. The patient was accustomed to compress the alæ of the thyroid cartilage, and at the same time she was ordered to cough and speak. The result was very favourable. First a rough voice appeared in the evening, then during the whole day, and at last she could both speak and whisper. By continued exercise of the muscles the voice became stronger. For supporting the closing muscles of the larynx, the author devised the following apparatus:—A spring running round the whole neck, the pomum Adami excepted, of the width of 1 cm., resting with the stuffed somewhat convex end upon the exterior parts of both plates of the thyroid cartilage. The author recommends, in all cases of loss of voice from different causes, to exercise the ventricular bands by this method for production of a rough but uniform voice.—("Wiener Med. Wochenschrift," 1876, Nos. 45, 46.)

Hypertrophy of the Vocal Cords (by Dr. Friedrich Fieber).—He distinguishes partial and total hypertrophy, and describes the appearance of the vocal cords, and the difficulties in speaking and breathing. In respect to the etiology, inflammatory processes are mostly the cause. In regard to the therapeutics, he recommends scarifications, also insufflations of nitrate of silver powder. He mentions a case he has completely cured by insufflation of powdered alum.—("Medic. Chir. Centralblatt," 1876, No. 28.)

On Phonophobia (by R. Coen).—The author often saw patients who with a phonic whispering voice complained of violent pain at every trial of phonation, which lead even to laryngospasm and dyspnœa. At the laryngoscopic examination nothing more than catarrhal inflamation, often only traces of it, was found. The vocal cords came well together, the patients could intone *a* and *e* without pain, but not after the laryngoscope was removed. There was a phonaphobia analogous to the photaphobia which also in cases of ophthalmia occurs by irritation of the rami conjunctivæ and corneæ of the trigeminus. This phonophobia the author explains is due to irritation of the superior laryngeal nerve which arises subsequent to a laryngeal catarrh. This irritation was always met with in nervous and irritable individuals. The fact that phonation was possible during laryngoscopic examination, he explains by the pressure of the laryngoscope upon the pharyngeal wall which was reflected to the larynx, in the same way as other cases of neuralgia will disappear for a certain time by pressure. Such a case of neurosis of the pharynx has not yet been described. Brushing of the larynx with tincture of opium, chloroform and morphia, extra- and intralaryngeal faradisation had no success. At last insufflations of quinine with sugar (1:10) brought a relief, and complete cure in three weeks.—("Wiener Allgemeine Med. Zeitung," 1876, No. 27.)

Contribution to the Doctrine of Fractures of Laryngeal Cartilages (by Dr. Gottfried Scheff).—The author mentioned a few important cases of fractures of the laryngeal cartilages, which have been communicated until now; then the experiments which he has himself made on the dead body; and at last a case of his own observation. A coachman, aged 24, was hurt while shoeing his horse, by a kick of the latter on the front of his neck. When the patient came under observation he was without voice, and unable to speak, and showed the symptoms of a marked stenosis of the larynx. The laryngoscopic examination was impossible, on account of the œdema of the parts, and the observer did not succeed in introducing a catheter into the trachea. Tracheotomy was quickly performed, but the patient died during the operation. Autopsy:—The subcutaneous areolar tissue at the whole anterior side of the neck, especially above the thyroid gland, was emphysematous, suffused with blood; at the larynx much extravasation. At the posterior inner wall of the larynx, extending obliquely downwards to the middle of the anterior wall, there was a wide laceration of the mucous membrane 1½ inches long, and the perichondrium was prominent, with suffused, indented, partly-inrolled corners, through which the uneven corner of the plate of the cricoid cartilage, separated from the ring of the cartilage, projected, whilst the pieces of fracture of the right side are in a slight contact. At the right vocal cord, ¼ centm. from the processus vocalis, a fissure 1½ in. in length was seen. Diagnosis:—Isolated fractures of cricoid cartilage, with laceration of the vocal cords.—("Wiener Allgemeine Med. Zeitung," 1876, No. 42–45.)

A Case of Lupus of the Larynx (by Dr. M. Grossmann, Vienna).—But few cases have been published. In this case the symptoms were distinctly pronounced. In 1859, Professor Türk first diagnosed lupus of the larynx; later he observed three cases. Ziemssen has also observed a similar case.

The patient had been previously treated by Professor Neumann for a conjunctival lupus. Voice was nearly normal. At the epiglottis a little loss of substance. A neoplasm was found at the left true and false vocal cord, extending to the right true vocal cord; below the left cord small prominences were also seen. The vocal cords perform their functions during phonation and respiration. In respect to the differential diagnosis between lupus and polypoid vegetations, carcinoma and syphilis, the author pointed out that here disturbance of motility of the vocal cords was absent.—("Anzeiger der k. k. Gesellschaft der Aerzte in Wien," 1877, No. 27.)

On Laryngeal Tuberculosis (by Dr. Ott).—The writer mentions the opposite opinions of authors; some (Rühle, Türck, Tobold, Duchek, Bruzelius, Waldenburg) consider the ulcerations of the larynx, as well as the so-called erosions, as due to the chronic catarrhal laryngitis; others (Rokitansky, Förster, Virchow, Klebs, Rindfleisch, and also Ziemssen) assert that ulcerations of the larynx occur only in consequence of general dyskrasias, tuberculosis, and syphilis.

He also put the question whether there is a primary tuberculosis of the larynx or not, and, according to the standard of the present opinion, he comes to the final conclusion that laryngeal tuberculosis is to be considered a secondary process, and ulcerations of the larynx are always to be thought of in connexion with tuberculosis, syphilis having been excluded and tuberculosis suspected.

The author speaks of the development of laryngeal tuberculosis, and he draws attention to the fact that tuberculous ulceration is confined to the inner part of the ary-epiglottic folds, and that in cases of syphilis both surfaces are diseased, and this phenomenon the author considers of the most important differential moment.

Ulceration and infiltration upon the ventricular bounds, are only developed in advanced tuberculosis, whilst in syphilis such ulcers appear at the beginning. The tuberculous ulcers do not extend so deeply as specific ones. An important diagnostic feature is that cicatrices occur more frequently in cases of syphilis. Finally, the author mentions the secretions. In cases of tuberculous disease of the larynx, large quantities of mucous are to be seen at the aditus ad laryngem and the lateral fossæ of the pharynx, which is not the case in other ulcerous processes.—("Prager Med. Wochenschrift," 1876, Nos. 6 and 7.)

On Anæsthesia of the Larynx (by Dr. Ott).—After having referred to the seven cases of anæsthesiæ of the larynx observed by Ziemssen, the author reports two similar cases caused by central disturbances—

(1.) A man aged 40, having paralysis of the right hand, showed at the laryngoscopic examination a complete paralysis of the left vocal cord. Touching with the sound proved anæsthesia of the left half of the epiglottis, of the left vocal cord, of the half of the soft palate, and of the posterior pharyngeal walls.

(2.) A woman aged 38, suffering for a long time from syphilis, showed anæsthesia of the left side of the interior of the larynx, from the left true vocal cord as far as beneath the cricoid cartilage. Autopsy showed no alterations of the larynx, but the fibres of the vagus were thinned.—("Prager Med. Wochenschrift, 1877, No. 9.)

Congenital Osseous Occlusion of the Right Posterior Nasal Fossa (by Professor Zaufal).—This anomaly has only been observed three times before. A girl, aged 15 years never has breathed through the right nasal cavity, and could never smell when the left nostril was closed. Examination from in front showed that both nostrils were free. Water injected through the right nasal cavity does not pass into the pharynx. A nasal speculum was introduced without difficulty through the right nasal aperture to a depth of 5·5 cm.; a distinct osseous resistance prevents the speculum from proceeding further; the calibre was diminished by a yellowish wall; the left nasal cavity was normal.

Rhinoscopic examination: Left fossa free. In the right one, parts of the nasal bones were not to be distinguished. This fossa is closed by a slightly undulating pale-yellowish wall, drawing from inwards and before, outwards and behind. This wall does not lie in the same level with the posterior edge of the septum. The sound, introduced from in front by an assistant during the rhinoscopic examination, could not be seen in the mirror, but met with osseous resistance.—("Prager Med. Wochenschrift," 1876, No. 45.)

On Adenoid Vegetations in the Pharyngo-nasal Cavity (by Dr. Ganghofner.)—The author mentions the frequent occurrence of this disease. W. Meyer alone has observed 175 cases since 1867; Michel ninety-two in four years. He describes their size and seat, not only on the vault, but also at the lateral walls of the pharynx, at the openings of the Eustachian tubes. He then reports the symptoms and disturbances of the functions; in particular, the increased secretion. impermeability of the fossa, indistinct pronunciation, and headache. In respect to the etiology, the author holds the opinion of W. Meyer, that scrofula and hereditary predisposition, or local irritation are the causes; and that this disease is specially to be met with in young individuals, and that as the vegetations retrograde deafness remains. The author observed seven cases in six months, always in young persons, particularly in children suffering from affections of the eyes or with evident signs of scrofula.—(" Prager Med. Wochenschrift," Nos. 14, 15.)

Chronic Catarrhal Pneumonia in the Apex of the Lungs of Children (by Dr. Fleischmann).—This catarrhal pneumonia occurs more frequently than it is diagnosed, the reason of it is to be found in the small extent of the infiltration, in the absence of marked physical symptoms, and of cough and sputa, and in the restlessness of the little patients during examination. Such symptoms which, in adults, will show an incipient pulmonary phthisis, as frequent bleeding from the nose, expectoration of blood, flatness of the thorax, heart palpitations, progressive anæmia, suppression of the supra clavicular fossæ, prove in children an infiltration of the lungs of long standing. Thereupon the author enumerates a series of symptoms which he thinks will indicate the presence of infiltration of the pulmonary apex in children during the period of dentition:—

(1.) Spontaneous unilateral swelling of the lymphatic glands of the neck, and the submaxillary region of the same side in which the infiltration has taken place. In children of six years this swelling of the lymphatic glands is no longer to be observed so distinctly.

(2.) Pertinacious, often recurring, unilateral conjunctitivis or scrofulous keratitis, signifies an infiltration of the lung of the same side.

(3.) Development of eczema of one side of the face or head, very often only slight, alternating with ophthalmia of the same side, also proves an infiltration of the lung of the same side.

(4.) Certain forms of diseases of the sympathic of one half of the face or head, as changes of the colour of the skin, development of erythema of the cheek and temporal region of one side.

(5.) Neuroses of the sympathetic of one side, redness and increase of temperature of the skin, such as a red and hot ear, are very often met with in children on the same side where the lung is diseased.

(6.) Neuralgia of the trigeminus, oculo-motorius and vagus which commenced simultaneously with the pulmonary disease of the same side, and which also disappear with the latter.—("Wiener Med. Presse," 1876, No. 20.

On Migratory Pneumonia (by Dr. Max Kelemen, observed at Professor Koranyi's Clinic).—The author first mentions the four cases previously published, all of which occurred in women. According to Lebert, the normal pneumonia happens more frequent in men (among 222 cases of pneumonia, 155 men and 67 women). The chief peculiarity of the migratory pneumonia lies in the number of the centres, the minimum of them amounts to 4, the maximum to 10, and only if the first centre has passed through the pathological process will the second begin. A further peculiarity is the duration and the stages of migratory pneumonia. Ordinary pneumonia lasts five to seven days, during which time all three stages have been passed through. In migratory pneumonia there are centres which have passed through the crepitation, and others passing through all three stages in two to three days. In the usual pneumonia the lower and middle lobe is attacked, migratory pneumonia can settle in any part of the lung, and the migration has no certain direction. The sputa have partly the colour of iron-mould and are partly catarrhal. The whole duration shows a remarkable deviation from usual pneumonia. The case of Waldenburg lasted more than two months, the first case of Weigand ten days, his second five weeks, and Fischel's six weeks.

The author relates his own case which occurred in the course of typhus fever. There were observed four centres. The first centre had its seat in the right lung backwards over the scapula; it lasted four days, reaching the stage of crepitation. The second centre was in the right mamillary line corresponding to the fifth and sixth rib The third in the left supra-spinous. The two latter lasted one day and did not pass crepitation. The fourth centre was not found in its beginning, but only in the dissecting room in the stage of hepatisation.

The author finally confirms Waldenburg's remarks on the analogy of migratory pneumonia with erysipelas migrans, which opinion Fischl and Weigand have also accepted. Friedreich goes still further, and says that both these acute infectious diseases have the same infecting moment, because he has observed both diseases simultaneously, and further that, in cases of migratory pneumonia as well as erysipelas, an increase of the spleen takes place.—("Pester Medic. Chir. Presse," 1876, Nos. 45, 46.)

Chronic Asthma (by Dr. Mader).—A remarkable case of chronic asthma in consequence of swelling of the bronchial glands was observed in a weakly youth of 18 years. He had suffered for nine years from difficulty of breathing, with cough; rough râles in deep inspiration are to be heard even from a distance. Other symptoms are wanting, heart and lungs normal. The patient was looking well. He was treated for a long time with different remedies, and by condensed air without any good result. Inhalations of vapors, vapor baths, bromide of potassium, iodide of potassium internally, were administered without any effect. At last fever occurred, and herpes labialis with coryza. After these troubles had ceased the asthma disappeared. It was not determined whether the disease was catarrhal or a vaso-motor neurosis. The patient had very often suffered from a great suffusion of the face.—("Bericht des Rudolfspitales in Wien," 1875.)

On Aneurism of the Abdominal Aorta (by Dr. Stiller, of Buda-Pest).—Dr. Stiller alludes to the rare occurrence of this disease. Lebert found only fifteen cases published by German authors, and 103 cases recorded altogether. The following case was observed by the author himself: A man aged 47 suffered much from violent and enduring pains in the back and abdomen. There was a prominent place, not exactly limited to the umbilical region, which showed a systolic protrusion and vivid epigastric pulsation. Aneurism of the aorta abdominalis was diagnosed, notwithstanding that a few of the symptoms could be explained by a carcinoma of the pylorus. The patient left the hospital in an improved condition, but returned after a few weeks. The tumour of the abdomen had doubled in size, was limited, and showed a distinct systolic impulse. On the following day sudden collapse with violent vomiting set in, the tumour increased, very much softened, and no longer distinctly limited. Rupture of the aneurism into the abdominal cavity and collection of blood round the aneurism was diagnosed. Eight hours later the patient died. The post mortem examination showed a healthy condition of the thoracic aorta, subacute endarteritis of the whole abdominal aorta, a circular ulceration with sharp edges at a level with the aortic opening of the diaphragm. From the upper corner of this circular ulcer to the bifurcation, the inner coat of the artery was lustreless, cicatrised, but showed no signs of atheromatous degeneration. Directly over the origin of the common iliac artery an aneurism was found of the size of half an apple, the anterior wall of which and the peritoneum over it had a triangular rupture. The sac is partly filled with coagulations. In the peritoneal cavity two-thirds of a pint of fluid and coagulated blood was collected, but there was no sign of peritonitis

The author explains the single symptoms of this case, the character and cause of the pains, the cachexia, the disturbances of digestion, the remarkable state of the endarteritis confined to the abdominal aorta, beginning and not followed by hypertrophia of the tissues but, on the contrary, by a loss of substance.

He also drew attention to the etiology, and to the fact that this disease occurs most frequently in men, who are in the prime of life. Further, he mentioned the influence of injuries and of bodily exertions, and at last the frequent occurrence of this disease in the English race.—("Wiener Medic. Wochenschrift," 1867, Nos. 18–20.)

On a Case of the Adhesion of the Heart with the Pericardium (by Dr. Nathan Weiss).—The case was observed at Professor Bamberger's

Clinic, May, 1875. The disease began two years previously, with a sensation of pressure in the region of the liver; later on, dropsy, ascites and dyspnœa occurred. Paracentesis abdominis was performed three times before his arrival in the hospital. The ascites and dyspnœa became very great. At first diagnosis of cirrhosis of the liver was made. After twenty-two pints of serous fluid were emptied by abdominal punction, a tumor of the spleen was found; but this was not able to explain all the symptoms, because after paracentesis abdominis the ascites did not return, but the cyanosis and dyspnœa remained as before. Therefore the cyanosis was not caused by ascites; both symptoms were present at the same time.

The tumors of liver and spleen were due to hyperæmia, in consequence of general venous stasis, and ascites followed without a preceding œdema of the lower extremities. Therefore a disease of the heart had to be supposed, and the question could only be whether there was fatty degeneration of the heart, or adhesion of the heart with the pericardium. By exclusion, and after regarding the whole course of the disease, the author came to the decision that there was adhesion of the heart to the pericardium, in combination with a simultaneous peritonitis, which combination the author had observed once before. The course of the disease Dr. N. Weiss explains in the following way:—The patient suffered from pericarditis and peritonitis, synechia of the pericardium, with consequent venous stasis, which later on led to transudation. By the last paracenthesis the product of transudation was nearly totally removed out of the peritoneal cavity; the last portion disappeared after diarrhœa. The inflamed peritoneal walls came in contact and grew together: therefore no more fluid could accumulate. In this way also the colicky pains during defæcation are explained, from which the patient suffers even at the present time. Later on disturbances of circulation appeared; if the patient made straining motions, extended œdema of the lower extremities and genitals, and also of the abdominal skin appeared; but there was never ascites. The author considers the prognosis quite unfavourable.—("Med. Jahrbücher der k. k. Gesellschaft der Aerzte in Wien," 1877, Heft III.)

Contributions to the Differentiation of the Cardio-Pneumatic Sounds (by Dr. Otto Kahler).—The author first mentions the researches of Professor Landois on this subject, and describes the cardio-pneumatic curve as observed by him. He also reports what has been published on this subject, on the character of this sound, on the locality where it is heard, and the moment of its occurrence, in respect to the movements of the heart and respiration, and on the relations which favour its production.

In respect to the character, the sounds can be subdivided into—

(1.) Such as are similar to the vesicular respiration observed already by Laennec, Wintrich, Röser, Bamberger, Skoda, Thorburn and Kuestner. The author thinks that these sounds arise in the pulmonary tissue.

(2.) Such as belong to the category of rattling and crackling noises synchronous with the movements of the heart.

(3.) Distinctly blowing noises, as, for instance, the auscultatory phenomena of cavities. These are to be found in advanced alterations of the pulmonary parenchyma. To this category the cases of Röser, Wintrich, Schrötter and Brun belong.

The location of the two first classes of cardio-pneumatic noises is mostly the left cavity of the heart. The systolic cardio-pneumatic sounds are the most frequent ones, and in respect to the phases of respiration, the inspiratory ones.

A further important diagnostic factor of the cardio-pneumatic sounds is the irregularity, and the periodical disappearance and return of them.

Dr. Kahler reports a case of cardio-pneumatic sound observed in a man suffering from chronic emphysema, insufficiency of the aortic valve, dilatation and hypertrophy of the left heart. During deep inspiration, systolic rattles were heard simultaneously with the sounds of the heart along the whole sternum in the second and third intercostal space. This noise was louder during the act of expiration. The chief characteristic of this sound was a systolic expiratory one.

The author confirms, by experiments on himself and a colleague, the statements of Landois on the availability of the manometric flame for demonstration of cardio-pneumatic currents of air.—("Prager Med. Wochenschrift," 1877, Nos. 6, 7.)

On the Paradox Pulse in cases of Stenosis of the Large Air Passages (by Dr. Petrina).—The author refers to Riegel's treatise on respiratory changes of the pulse, and that this difference (named by Kussmaul "pulsus paradoxus,") which, according to Griesinger, Kussmaul, Bamberger, and Traube, was considered a symptom of mediastinitis and pericarditis, is also observed in healthy individuals, but in particular in cases of obstruction of the large air passages. In such cases, the decrease of inspiratory pressure is connected with an essential impediment of the filling of the systemic circulation. Riegel demonstrated these relations sphygmographically in two cases of laryngostenosis, and Sommerbrodt also observed this respiratory peculiarity of the pulse.

The author himself observed a similar case. A man aged 23, suffering from multiple lymphosarcomata and consecutive dyspnœa, and from a similar disease of the mediastinal and lymphatic glands. Three weeks before death the patient became very dyspnœic, the pulse was alternately smaller and larger simultaneously with the inspiration and expiration. After a few days, dyspnœa and the paradox pulse became constant, and the autopsy confirmed the diagnosis. A mass of hypertrophied lymphatic glands was found compressing the trachea, and also similar ones were met with in the anterior and posterior mediastinum. The aorta was neither torn nor compressed, and the changes of blood-pressure of the systemic circulation could be referred to a stenosis of the trachea and the bronchi.

The respiratory decrease of pressure established by physiologists long since, is also proved by this pathological case.—(Prager Med. Wochenschrift, 1877, No. 12.)

A Case of Echinococcus near the Larynx.—Professor Heine has observed, in a lady, a painless distinctly-fluctuating growth, the size of a plum, on the left side of the larynx. The diagnosis was undecided between goitre and hypertrophied suppurating lymphatic glands. On incision, pus and echinococcous cysts were evacuated. It could not be determined whether the cyst had developed in the thyroid gland or in the muscles of the neck.—("Prager Med. Wochenschrift," 1876, No. 44.)

On Parenchymatous Inflammation of the Tongue (by Dr. Th. Sidlo).—This disease has been very rarely observed as a primary disease, therefore the author gives the detailed histories of seven cases observed by himself since 1870 at the Vienna Garrison Hospital. In his conclusions he considers all cases primary, because no connection was to be found with Bright's disease, tuberculosis, etc.

In respect to etiology, he, like Bamberger and Vogel, does not think that mechanical irritations are the exciting causes, because the tongue is very often injured by carious teeth, by uræmic or epileptic attacks, without parenchymatous glossitis following. He pointed out that in cases of parenchymatous glossitis, in consequence of great cold, especially, the submental glands have been the origin of the inflammation.

In respect to the treatment of this disease, the author recommends cauterisations with nitrate of silver when patients fear the cutting instruments, but only when the swelling of the tongue is not very great. Cure will follow slower than after the use of the knife, which is always the best and most certain remedy. The author recommends incision of the edges and apex of the tongue, because after rapid decrease of the swelling of the sides, the teeth do not cause any more irritation. Finally, he thinks that dyspnœa not only occurs when the swollen tongue touches the posterior pharyngeal wall and presses down the epiglottis, but it is sufficient, when the soft palate is pressed backwards and upwards, to prevent the circulation of the air in the pharyngo-nasal cavity. —("Wiener Allgemeine Med. Zeitung," 1877, Nos. 8–10.)

On Retropharyngeal Abscesses in Children from 144 *observations of his own; on Retropharyngealis Lymphadenitis, from* 43 *observations of his* *own* (by Professor Bokai, in Budapest).—Among 144 cases of retropharyngeal abscesses there were—129 idiopathic; 3 secondary, in consequence of hypostatic abscesses; 4 secondary, in consequence of cervical spondylitis; 7 in the course of scarlet fever; 1 traumatic, due to a foreign body.

Among 144 cases, 102 have been evacuated by means of a bistoury, 5 by means of pressure with the finger; 19 opened spontaneously, 18 remained without opening; 11 of them died, 120 have been perfectly cured, 13 were not observed any further.

In the same category belong also 43 cases of retropharyngeal lymphadenitis, inasmuch as they are the result of abscesses in many cases. The greater number of the abscesses have been observed at the sides of the pharynx, less at the middle (86 at the right side, 64 at the left, 31 in the middle, and 6 unknown). The same relation was shown by the retropharyngeal lymphadenitis. These observations are explained by the anatomical relations of the lymphatic vessels of the neck, as described. Hyrtl, Luschka, Henle, Fourtnal, Quain, Hoffmann, Henke, and König have described the anatomical relations of the pharynx and œsophagus, and have stated the course of hypostatic abscess. Amongst 144 cases, 78 occurred in boys, 66 in girls; amongst 43 cases of retropharyngeal lymphadenitis were 27 in boys and 16 in girls.

Dr. Bokai thinks that such children are predisposed to retropharyngeal abscesses who have diseases of the lymphatic glands of the neck, diseases of the mouth, pharynx, and larynx, inflammation of the vertebral column, eczema of the face or occiput, or otorrhœa.

The inspection of the pharynx will not always suffice; it is necessary to touch it with the finger. At the same time the conditions of the superficial and deep lymphatic glands of the neck should be ascertained by external palpation.

In respect to the course, idiopathic abscesses are usually developed in two days, secondary in two weeks and more. Development took place in 65 cases in from two to fourteen days; in 13 cases in three weeks; in 10 cases in four weeks; in 7 cases in from five to eight weeks. Therefore the author distinguishes acute and chronic cases of retropharyngeal abscesses. In older children the symptoms are less violent than in infants.

The first symptom is difficulty in swallowing, the second an alteration of the voice, which assumes a nasal sound. In cases of very large retropharyngeal abscesses breathing also is difficult, in consequence of the narrowing of the pharynx. Cough is not a constant symptom; the position of the head is a valuable one; the neck shows a singular stiffness. Fever is either wanting or very moderate; in three cases the author noticed facial paralysis. The diagnosis is difficult when other affections of the mouth or pharynx are found, as in cases of scarlatina, when diphtheria is still present. The prognosis is in general favourable.

Therapeutics.—The author treats the acute retro-pharyngeal lymphadenitis by cold water fomentations and sucking of ice, tincture of iodine applied externally never had any good results. When the abscesses are formed they should always be incised by means of a bistoury, but not before the swelling is elastic and fluctuating. The pharyngotome devised by Professor Stoerk, which is introduced under guide of the laryngoscope, the author thinks cannot be used in children. After the incision, pressure should be exerted upon the lower part of the abscess, and at the same time also from without; injection of warm water favours the complete evacuation of pus.

Schmitz has devised a knife for incision, which the author recommends to practitioners. The further treatment of the opened abscesses consists of repeated injections of warm water, and in older children of gargling. If closed the introduction of a sound will separate the lips of the wound again, and if that is not possible incision must be resorted to a second time.

An unpleasant complication after incision, is the entrance of matter into the air-passages, which is to be feared if the abscess is deep-seated, and when the child is debilitated. The author reports that two children became asphyxiated during evacuation of the matter, but through irritation of the phrenic nerves by means of the electric current suffocation was avoided. The entrance of matter into the air-passages is followed by pneumonia. The author related a case of retro-pharyngeal abscess which emptied into the external auditory meatus. Incision from without is very seldom indicated, and only if the abscess has so deep a seat that it cannot be reached with the finger. The author never saw such a case, and he was never forced to perform tracheotomy.

In an appendix the author reviews a series of ten most interesting cases occurring in his own practice—("Jahrbuch für Kinderheilkunde," 1876, IX., Heft 1 and 2.)

Formation of a Diverticulum of the Œsophagus, Performance of Œsophagotomy (by Dr. Nikoladoni, Assistant to Surgical Clinic of Professor Dumreicher).—A girl, aged 8 years, swallowed some concentrated lye two years previously, which resulted in a stricture of the œsophagus, which, not being treated, led to the formation of a diverticulum of the size of a chestnut. The introduction of bougies from the mouth was impossible, and in order to feed the patient, Dr. Nikoladoni resolved to perform œsophagotomy and to open the diverticulum to enable him to introduce the bougies. After the operation was done a semilunar fold was found extending just over the stricture, and rendering it impossible to introduce bougies. The author sewed the mucous membrane of the diverticulum to the skin, and the child was nourished through the wound. Nine days after the operation the patient died from pneumonia. This was the first case in which œsophagotomy was performed for the cure of a diverticulum of the œsophagus.—("Anzeiger der k. k. Gesellschaft der Aerzte in Wien," 1876, No. 9.)

Contributions to the Diagnosis and Therapeutics of Laryngo- and Tracheo-Stenoses (by Dr. T. Schnitzler).—After having described in detail the case of stenosis of the pharynx, œsophagus, larynx, and trachea, caused by an accessory lobe of the thyroid gland, which had already been reported, the author said that this case of stenosis of the larynx, caused by adhesion of the vocal cords, which he had operated on and published in 1866, was the first one successfully operated on intra laryngem, and he then related a similar case of laryngeal stenosis, caused by adhesion of the vocal cords, these forming a thick membrane, so that only a small opening remained of a few millimetres in width. This was also cured in four weeks, by discission with a blunt-pointed bistoury, followed by introduction of catheters. He divides the strictures of the larynx, as generally known, into—

(1.) Intralaryngeal and intratracheal stenoses, in consequence of disease, and

(2.) Into extralaryngeal and extratracheal strictures caused by diseases of the neighbouring organs.

(3.) Strictures caused by the entrance of foreign bodies into the larynx and trachea.

Among the symptoms common to all strictures of the air-passages, he points out dyspnœa, of which he, like Gerhardt, distinguishes three stages. After having mentioned the differential diagnosis of laryngeal, tracheal, and bronchial strictures, he adds another important symptom, *i. e.*, the change of the voice, and lastly the stenotic noises.

In respect to the strictures caused by compression, he stated that the stenotic symptoms appear not only as a result of pressure by the goitre upon the larynx and the trachea itself, but also by simple compression of the vagus and the recurrent nerves. — ("Wiener Medic. Klinik.," 1877, Heft 1.)

On Bronchotomy (by Dr. Winiwarter, House-Surgeon of the Kron-Prinz Rudolf Hospital for Children, in Vienna).—In the surgical report of this institution we find a chapter on bronchotomy which is worthy of record. In the interval of one year and a-half bronchotomy has been performed sixteen times in this hospital for the relief of laryngeal stenosis in consequence of diphtheria. All children died between half an hour and five days after the operation. In thirteen cases the opening of the air-passages was made above the thyroid gland, in three cases below it. The author advises always to perform the operation under anæsthesia, and afterwards to apply a moist sponge before the canula. Inhalations of lime-water have been administered in short intervals. The children were wrapped in moist and warm cloths. Quinine or the salicylate of soda were given internally.

To the malignancy of the epidemic and the circumstance that the operation was always performed too late, the author attributes the failure of them. In all cases there was general infection prior to the operation. The autopsies showed extensive lobular pneumonia as a frequent cause of death. The author recommends tracheotomy as soon as the croupy cough and inspiratory efforts begin, and it is very unfortunate that parents seldom permit it to be done before it is too late.—("Jahrbuch für Kinderheilkunde," 1876, Band XI., Heft 3.)

Empyema, Thoracentesis and Drainage of the Pleural Cavity in a Child aged three and a-half years, with Cure (by Dr. Winiwarter).—A child, aged three and a-half years, suffered from empyema of the left side, with swelling of the intercostal spaces, and displacement of the heart. Under the application of antiseptics an incision one inch in length was made in the sixth intercostal space, where pus had already penetrated the thoracic wall, and was collected under the skin. The perforation of the pleura was enlarged, and a large quantity of thick greenish matter evacuated. The pleural cavity was then washed with a 1 per cent. solution of carbolic acid, a drainage tube inserted, and Lister's bandage applied. On the ninth day the evacuation of matter ceased, and fever set in. But after a resection of a small piece from the upper edge of the seventh rib, and a new incision of the thickened pleura the matter was freely evacuated, and fever disappeared. Ninety-nine days after the operation the child was quite cured.

The author also says, that opening of the pleural cavity by incision and drainage, under the application of antiseptics, is the most favourable method of operation of empyema, both in respect to the evacuation of the matter and the re-expansion of the lungs.—("Anzeiger der k. k. Gesellschaft der Aerzte in Wien," 1877, No. 25.)

Thoracentesis, with favourable result.—Dr. Hoisel relates the following case:—A woman, nine months pregnant, was attacked with pleurisy of the left side. Four weeks after having been delivered of a healthy child, she suffered very much from dyspnœa, and a constant desire to cough, and pain in the left side. On percussion, an extended pleuritic effusion was found. On the thirty-third day after the beginning of the pleurisy, thoracentesis was performed, and three pints of a greenish viscous fluid evacuated. The patient felt great relief during and after the operation, and three days afterwards clear percussion sound was heard over the whole left lung, except a small part, about the width of a finger. Six weeks later the patient was able to perform severe manual labour.—("Medic.-Chir. Centralblatt," 1876, No. 22.)

On the Treatment of Pleurisy, and its Causes (by Dr. M. Heitler).—After having mentioned that the development of pleuritic effusions can neither be prevented, nor the resorption of them greatly expedited by means of internal remedies, he speaks of the value of and the indications fort horacentesis, and the mosts uitable method of doing it. In most cases trocars, scalpels, bistouries, an india-rubber tube, and a syringe are sufficient. In respect to the prognosis, it is very important to distinguish between serous and purulent effusions; hæmorrhagic ones afford an unfavourable prognosis. The operation must be speedily done if the effusion be very extended and the thoracic cavity completely filled, and the neighbouring organs are displaced, particularly if the effusion took place very suddenly, as, under such circumstances, sudden death has often been observed. If the effusion increases slowly, the operation can be delayed for two or three weeks.

The author considers all aspirators as dispensable, and recommends them only if, as in old people, it is not to be hoped for that the elastic powers of the thorax will suffice to expel the fluid. In cases of purulent effusions the surgical treatment is most successful. After the matter has been discharged, the pleural cavity must be also purified, and a large opening should be made. After having been assured, by explorative puncture, that the effusion is of a purulent character, the operation is to be carefully done, and the pleural cavity opened, by an incision from 2 to 2½ inches in length. The treatment after operation is very important; injections of water, to which carbolic acid is added, are to be made into the pleural cavity. This irrigation can be best made by means of a tube of india-rubber, laid in as far as to the deepest point of the pleural cavity. Finally, the author remarks that the operations will not be entirely without danger, because cases of sudden death during performance of thoracentesis in weak individuals have been published. These were probably due to cessation of the heart-beat.—("Wiener Klinik," 1877, No. 5.)

Three Cases of Thoracentesis (by Dr. Geiza Faludi in Buda-Pest).—The author successfully performed thoracentesis by means of Dieulafoy's apparatus in three children, of the ages of ten months, three years, and three years and a-half. In the child of ten months, 130 grammes of pus were withdrawn, and one week later 100 grammes. The results obtained in these three cases the author sums up as follows:—

(1.) The thoracentesis, by means of Dieulafoy's apparatus, is a simple operation, which can also be performed on out-patients.

(2.) The operation will have the greater and speedier success the sooner it is performed.

(3.) The operation must be repeated many times.

(4.) Slight fever takes place after the operation, almost invariably, which probably depends upon incipient resorption.

(5.) If the operation is delayed too long, the formation of a thoracic fistula cannot be prevented.—("Pester Med. Chir. Presse," 1876, No. 44.)

SURGERY.

Extraction of a large Pocket-Knife out of the Œsophagus by Œsophagotomy (by Dr. Carl Gussenbauer, Deutsche Med. Wochenschrift, 1876, No. 2).—The author describes a case of œsophagotomy performed at Professor Billroth's surgical clinic, on a man aged 34 years, who in cleaning his tongue, swallowed a large pocket-knife. After fruitless attempts to remove it at Crakow, the patient came to Vienna, and Professor Billroth at once performed œsophagotomy. Only after lengthening the incision was the knife removed. The blade formed a right angle with the handle, the former having been pushed downwards to the right, the latter upwards towards the left side. The handle was 7 cm., the blade 6 cm. long. Notwithstanding the conditions of the wound, reparative action speedily set in; but the patient died a few days later, from a tuberculous disease of his lungs, from which he had suffered for many years.—("Med. Chir. Rundschau," 1877, Heft 1.)

Amputation of the Tongue on account of a large Tuberculous Tumor, which was considered a Carcinoma (by Professor Albert, in Innsbruck).—Only in the last years have surgeons occupied themselves more with this subject. The author narrates a very interesting case:—

A peasant aged 60 years, in March, 1876, came under the observation of the author on account of a hard, ulcerated tumor of the size of a pea on the left edge of the tongue, which was considered of a carcinomatous nature. The ulceration had had granulations, therefore tuberculosis and syphilis were excluded. A piece was excised, and the microscopic examination showed granular cells and parts of papillæ. The patient was then suffering from caries of the right wrist, and in the meantime was sent home. Four weeks later he returned, the tumor having grown five times larger than before, and covered with numerous superficial greyish ulcers. No lymphatic glands were infiltrated. The author now considered the tumour a carcinomatous one, notwithstanding that a dulness of the percussion sound was found at the apex of the left lung. On April 3rd the tumor was removed by means of the galvano-caustic knife. Recovery was very favourable, without fever. The removed part was now examined microscopically by Professor Schott, and the diagnosis was "Tuberculosis of the tongue." On the tenth day after the operation the wound was nearly totally healed; the patient was so well that he was about to go home, but suddenly he fell down and died. The autopsy showed caseous infiltration and cavities in the apices of both lungs, caries of the hand and embolism of the pulmonary artery.

This case is similar to that reported by Euteneuer. Only two cases of large tuberculous tumour of the tongue are known which had the appearance of carcinoma; and the author thinks that the number of such cases would be greater if, in all cases of amputation of the tongue, the microscopic examination would have been made. He thinks that a tumor of the tongue of a tuberculous individual should be considered tuberculous even if the microscopic appearance showed the character of a carcinoma, and he thinks that many of those cases reported as without relapses were only tubercular tumors. He mentions also a case operated on by Professor Billroth, which relapsed before the wound was healed.

Professor Albert also reports a second case. A man aged 50 had a carcinomatous induration along the whole left border of the tongue. The floor of the oral cavity was quite free. After osteoplastic resection of the inferior maxilla and ligature of the lingual artery, the tumor was removed. But before the wound was healed the floor of the oral cavity became indurated; which rapidly became adherent with the inferior maxilla, and after a short time tubercles appeared upon the surface of the wound. The author, therefore, confirms the teaching of the Professors Schuh and Dumreicher—that every case of carcinoma of the tongue will lead, in a short time, to fatal results, without exception, even when the operation has been performed.—("Wiener Med. Presse," 1877, No. 2.)

MATERIA MEDICA AND THERAPEUTICS.

(Pneumato-therapeutics.)

Hypodermic Injections of Carbolic Acid for the Cure of Phthisis (by Dr. J. Schnitzler).—The favourable result obtained in a case of severe diphtheria by hypodermic injections of carbolic acid, encouraged the author to try this method in the fever accompanying phthisis. In a preliminary communication he speaks of the success he gained during two months in more than 100 patients (phthisis) who have been treated by hypodermic injections of carbolic acid. Already, after a short time, carbolic acid was found in the urine. One or two syringes full of a solution (1 or 2 per cent.) of carbolic acid were twice daily injected. The author mentions, as a very remarkable success, the decrease of the fever, debility, and also of the troublesome profuse night-sweats. In some cases, the author asserts that coughing and expectoration also became better. A bad effect was never observed, only the burning sensation at the place of injection remains longer than after hypodermic injection of morphia.—("Wiener Med. Presse." 1876, No. 32.)

Hypodermic Injections of Carbolic Acid in Phthisis of the Lungs (by Dr. J. Hirschfelder).—The author treated twenty-five cases of phthisis of the lungs, in different stages and complications, by means of hypodermic injections of carbolic acid in Dr. Schnitzler's Clinique at the Vienna Policlinik, and he attained the same results as Dr. Schnitzler has related, namely, an improvement of the subjective symptoms of debility, sleeplessness, and night-sweats.—("Wiener Med. Presse," 1876, No. 49.)

Hypodermic Injections in Cases of Hæmoptysis (by Dr. Josef Hirschfeld).—He recommends, as the best remedy against hæmoptysis, hypodermic injection of *ergotin* in concentrated solution (1 part in 10 parts of glycerine), as Professor Drasche already used in 1871, in Vienna. The solution in glycerine is more complete, and fungi do not develop so early as in the aqueous preparation. The author injects morphia, either before ergotin or at the same time, in order to diminish the desire to cough in phthisis. When given with morphia, ergotin can better display its hæmostatic effects.—("Mittheilungen des Wiener Medic. Doctoren-Collegiums," 1877, No. 13.)

On the Therapeutic Effect of Salicylic Acid (by Dr. Franz Torday, of Buda-Pest).—He treated 69 cases of diphtheria (57 children, 12 adults), and 6 diphtheritic wounds, and as a result of his experience he concludes that salicylic acid applied internally is not equal to quinine, and is only to be used externally, instead of carbolic acid.—("Pester Med. Presse," 1876, No. 38.)

Therapeutics of Diphtheria.—The "Wiener Med. Presse" reports, in Nos. 1, 2, and 5 (1877), the present methods of treating diphtheria, which are used by Oertel, Schnitzler, and Senator.

Oertel considers diphtheria a local disease, and deprecates the withdrawal of blood, and rarely even applies ice, because the only effect is to alleviate the pain in the inflamed parts. He never removes the membranes, or destroys them by means of caustics and chemical remedies. Astringents are useless. He warmly recommends moisture and inhalations of steam of 45° to 50° Celsius, every half-hour, in order to promote the production of pus. For disinfection, he gives gargles with alcohol or solutions of carbolic or salicylic acid, of thymol, chlorine water, and permanganate of potassium.

Schnitzler's method: Sucking of ice every ten minutes; inhalation of aqua calcis, carbolic acid (1·500) or salicylic acid (1·300), chloride of potassium (5·100), by means of his atomiser, every hour; besides slight brushing with a concentrated solution of carbolic acid (1·50). He disbelieves in Oertel's method of inhaling hot steam, because the pain in swallowing is increased by it, and the patient therefore ceases to eat.

Senator's plan is to prevent the extension of the pharyngeal affection into the larynx and trachea. He rejects every irritative remedy, and recommends gargles with the common disinfectants, and internally chlorate of potash. At the beginning of the laryngeal affection he gives an emetic, when dyspnœa is not too great. His favourite emetics are apomorphia, large doses of ipecacuanha, and sulphate of zinc and copper. In severe cases of laryngeal disease, Senator applies, in children of two to three years, an inunction of grey ointment. Laryngotomy must not be done too late.

Treatment of Diphtheria in the Hospitals of Vienna.

Dr. Unterholzer (Hospital for Children at Leopoldstadt). Prophylaxis.—Cold water compresses, equal parts of aq. calcis and aq. destill. for gargles, brushing and inhalations. Internally ice and

℞ Kalichloric .. .. 1·5 grms.
Aq. font. .. .. 70·0 „
Syr. .. .. .. 10·0 „
S. S. Every hour a tea-spoonful.

In acute fevers sulphate of quinine in lange doses and salicylate of soda.

Dr. Luzinsky applies internally chlorate of potash, quinine and digitalis in the acute fever. In severe cases applications to the pharynx of solutions of nitrate of silver.

Dr. Lederer uses cold internally and externally, brushing with solution of nitrate of silver in mucilage of gum arabic a few times a day; internally bicarbonate of soda, chlorate of potash, tannate of quinine.

Dr. Holhorn,—

℞ Liq. ferri sesquichlor. .. .. 1·0 to 3·0
Glyc. puri .. .. 60·0
S. S. every second hour a tea-spoonful.
and ℞ Flor. sulphur. depurat. .. .. 25·0
Rad. liquirit. and pulv. lycopod. ..$\overline{\text{aa}}$ 2·5
D. S. every second hour a tea-spoonful.

Professor Politzer has used for eight years aq. calcis with the best success as a gargle, for inhalation, for brushing and injection, and he says that of 100 cases 90 to 95 per cent. have been saved. But he orders them to take a tea-spoonful every quarter of an hour night and day without interruption.

On Diphtheria and its Treatment (by Dr. Luzinsky).—Diphtheria is a general disease caused by a special alteration of the blood, which is distinguished by its coagulability. Diphtheria and croup are the same diseases. In respect to therapeutics he recommends solvents, alkalies, carbonate of potassium and soda, chlorate of potash. For removal of the membranes he uses mild applications with glycerine, lactic acid and lime water.—("Wiener Allgemeine Medicin. Zeitung," 1877, Nos. 9 and 10.)

Treatment of Diphtheria with Ice (by Strohmayer, of Graz).—Ice is to be applied in cases of increased temperature and swelling of the lymphatic glands; and the author recommends the use of India-rubber tubes, as large as the intestines, in which ice-water circulates. The most important thing is the removal of the fungi and keeping the throat clean. He uses perchloride of iron with glycerine for brushing and internal administration.

℞ Glycerini optimi .. .. 30·0
Liq. ferri sesquichlorat. .. 2·0
D. S. for brushing.

℞ Glycerini optimi .. .. 80·0
Liq. ferri sesquichlorat. gutt. 6 to 10.
D. S. Every hour a tea-spoonful.

("Medic. Chirurg. Centralblatt," 1876, No. 35.)

Treatment of Angina Diphtheritica (by Dr. Lindemann).—The author has witnessed eleven epidemics, and has saved four-fifths of the patients by means of the following remedies:—

℞ Tinct. strugae occid. gutt. 20.
Aq. destill. .. .. .. 70·0
Syr. cort. aur .. .. .. 5·0
D. S. every half hour 1 tea-spoonful.

℞ Acid. carbol. purissim .. 0·05
Aq. destill. .. .. .. 70·0
Syr. cort. aur. .. .. 5·0
D. S. quarter hour a tea-spoonful,

In a few cases he ordered for internal use—

℞ Nitrate of silver 0·02, aq. destill. 70·0; every quarter of an hour a tea-spoonful.

("Medic. Chirurg. Centralblat," 1877, No. 45.)

On the Utility of the Nasal Funnel in Surgical Operations in the Naso-Pharyngeal Cavity (by Professor Zaufel).—Examination of the nose from in front has heretofore been neglected. The author, therefore, tried to increase the field of vision, and to make a free space for the light through the dilated anterior nostrils by means of a funnel-shaped speculum introduced through the inferior meatus to the post-nasal fossa, or even to the posterior pharyngeal wall. By this plan diagnosis and treatment have been improved. We are enabled by it to control the instruments introduced behind the soft palate. The author praises the excellence of this method, as every part of the nasal cavity is revealed to view by this instrument.

With the aid of this funnel-shaped speculum the author cleans and dries different places by little tampons; he then introduces the galvano-caustic wire, or applies crystals of bromic acid; he makes injections of tincture of iodine into the hypertrophied pharyngeal tonsil, and removes adenoid vegetations, nasal polypi, or large retro-pharyngeal growths, by means of this instrument. This instrument consists of three connected tubes 15 cm. in length; the central one has a diameter of 1·4 mm., both lateral ones are only wide enough to permit the thin wire to pass through. In the central tube there is a movable bar of metal, bearing at its end two spring-like branches, which are only separated 2 cm. when protruded. This instrument can easily be introduced through a funnel (No. 5) when the bar of metal is drawn backwards. The author has also devised another similar wire loop.—("Prager Med. Wochenschrift," 1877, No. 12.)

Expiration out of the Pneumatic Chamber into the Free Atmosphere or Rarefied Air, and the Treatment of Pulmonary Emphysema (by Dr. Pircher, of Meran). — After having convinced himself by many trials on himself and other healthy persons that this method is quite harmless, and even useful, the author commenced in the beginning of 1875 to treat patients by it without having known that in 1874 Dr. Lange had already proposed this method, and that Dr. Josephson, in Hamburg, had used this plan for several years with the best results.

In consequence of many trials and very favourable success in the treatment of pulmonary diseases, especially in emphysema, Dr. Pircher prefers the method of expiration out of the condensed air of the pneumatic chamber into free atmospheric or rarefied air to the method of expiration into rarefied air of the portable apparatus.

The end to be obtained by the pneumatic treatment of pulmonary emphysema is a thorough ventilation of the lungs, *i. e.*, evacuation of the large quantity of the residual air and introduction of fresh air containing ozone, without the alveoli enduring a higher pressure than the surface of the body. And this end is better attained by expiration from the pneumatic chamber, which the following average table, formed by experiments, will prove:—

	Vital capacity, cm.	Residual air, cm.
On expiration into free atmosphere (spirometer) ……..	3,000	—
,, ,, ,, $\frac{1}{60}$ rarefied air of a transparent appearance	3,192	192
,, ,, ,, $\frac{1}{30}$ rarefied air of a transparent appearance	3,318	318
,, ,, from the pneumatic chamber at pressure of 0·2 cm. into free atmosphere	3,320	320
,, ,, from the pneumatic chamber at hyperpressure of 0·4 into free atmosphere ..	3,173	173
,, ,, from the pneumatic chamber at hyperpressure of 0·2 into $\frac{1}{60}$ rarefied air ..	3,685	685
,, ,, from the pneumatic chamber at hyperpressure of 0·4 into $\frac{1}{60}$ rarefied air ..	3,337	337
,, ,, from the pneumatic chamber at hyperpressure of 0·2 into $\frac{1}{30}$ rarefied air ..	3,764	764
,, ,, from the pneumatic chamber at hyperpressure of 0·4 into $\frac{1}{30}$ rarefied air ..	3,400	400

This table will show that in one and the same individual, by expiration from the pneumatic chamber into free atmosphere, even at the slightly increased pressure of 0·2 atmosphere, nearly twice as much residual air is evacuated at one expiration than by the portable apparatus.

At an increased pressure of 0·4 atmosphere an unpleasan tion of constriction is felt in the larynx and an inclination t therefore Dr. Pircher never uses more than 0·2 atmosphere p

He draws attention to the fact that one sitting in the pn chamber may last for two hours without the patient b fatigued, whilst Waldenburg only uses three cylinders, which thirty expirations. With respect to the inspiration of co air, the author decidedly prefers the pneumatic chamber to t able apparatus, because in the former there is no difference pressure of the air of the lungs and upon the thorax.

Dr. Pircher thinks that we have, in expiration from the pn chamber into free or rarefied air, a more valuable and reliable for treating pulmonary emphysema and its secondary diseases the portable apparatus.

Finally, Dr. Pircher relates the histories of two cases of emph one of which was completely cured, the other very much impr ("Wiener Med. Presse," 1876, Nos. 34-36.)

The Local Treatment of Emphysema (by Dr. Polansky).—The tions under which the pulmonary emphysema is curable are :—

(1.) By removal of the air which remains in the superior p the lungs.

(2.) Introduction of air with oxygen.

(3.) The air-passages should not be covered by mucus, prev the oxidation of the blood.

To fulfil the first condition the author advises expiration int fied air of $\frac{1}{80}$ to $\frac{1}{40}$ atmosphere twice a day. He also recom the patient to read or speak loud. The second method he "auxiliary treatment," and it consists in inspiration of condens rich in oxygen, removal of all impediments for breathing, and liv well ventilated rooms.—("Mittheilungen des Wiener Medic. Do Collegiums," 1877, No. 2.)

GERMANY.*

Report by Dr. P. Langer, Private Assistant to Professor Schrötter, Vienna.

Anatomy and Physiology.

Contributions to the Anatomy of the Larynx (by Professor Rüdinger, of Münich).

I. *On the Muscles of the Ventricular Band.*—The author does not agree with Luschka, who ascribes no functional importance to the superior thyro-arytenoid muscle. After many researches, Dr. Rüdinger suggests that this muscle, named by him "the muscle of the ventricular band," which is very rarely absent in males, and less developed in females, has a great physiological importance upon the sounding cavities.

The muscle of the ventricular band is confined to the lateral surface of the ventricular band, and it assists in forming the inner wall of the sinus Morgagni. The muscle which Rühlmann, Santorini, Henle, Luschka, and Bataille named the thyro-arytenoid superior muscle cannot be identical with the muscle of the ventricular band, and Dr. Rüdinger thinks that this muscular stratum, lying in the submucous tissue of the ventricular band has not been seen at all by other observers.

Dr. Rüdinger then quotes the views of Dr. Führbringer on the laryngeal muscles.

The muscle of the ventricular band has a flat surface, a diameter of 1—2 mm., and lies upon the lateral surface of the ventricular band; it extends from the lateral anterior corner of the arytenoid cartilage forwards and upwards to the lateral corner of the epiglottis, and therefore Professor Rüdinger names it the ary-epiglottic *inferior* muscle. As the sinus Morgagni represents a rather large recess of the mucous membrane, and the muscular strata accompany the lateral walls very far, it must be acknowledged that the muscle of the ventricular band has a great influence upon the dilatation and narrowing of the ventricle.

Professor Rüdinger had opportunity to irritate the muscle of the ventricular band of a decapitated man by means of the electric current for eleven minutes, after death. During the influence of the electric current upon the free ends of the isolated recurrent nerves, the movements of many laryngeal muscles could be seen, and especially was the epiglottis moved backwards and downwards. When the electrode was placed upon the middle of the surface of the ventricular band, a single movement downwards and inwards was noticed; when placed a little deeper this movement occurred much more energetically, and the entrance to the sinus Morgagni became narrowed, the sinus itself enlarged. By these experiments it is demonstrated that the ventricular bands can make independent movements inwards and downwards.

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* See note, page 324.

Researches on Pulmonary Epithelium (by Dr Küttner).—In order to determine the question whether the pulmonary alveoli are lined with epithelium or endothelium their mode of development must be considered. The author's observations on the embryos of cows of different ages and on adults enabled him to see the transition and continuity of the epithelium of the bronchioli into the infundibula, and finally into the alveoli. At the borders between the alveoli and infundibula he observed the epithelial cells lying in two adjacent cavities, and he convinced himself that epithelium will conform itself to the cavity and surface. The direct proof of the continuity of the bronchial and alveolar epithelium and their development from the vesicle of the intestinal glands contradicts the opinion that the inner covering of the alveoli is endothelium. Dr. Küttner has also demonstrated, by artificial injections of the bronchial and alveolar spaces of embryonic lungs, that the pavement epithelium of the alveoli of the lungs which contain respired air are nothing else than the cubic epithelium of the alveoli of the embryonic lung, dilated by the enlargement of the cavity; the expansibility of the pulmonary epithelium was thereby proven, and he could also demonstrate by many investigations of the lungs of newborn or older children that pavement-epithelium has never been developed by fatty degeneration of the embryonic cells, but only by dilatation of the embryonic pavement-epithelium.—("Virchow's Archiv," Heft 66, p. 12.)

On the Pneumogastric Nerve and its Relation to Pneumonia (by Dr. J. Steiner, Halle).—The influence of the pulmonary fibres of the vagus upon the production of pneumonia is to be examined, (1) in the changed rhythm of respirations, as it always occurs after a cutting through of these fibres; and (2) in the trophic nerves which run along the course of the vagus.

When, after cutting through both vagi, the central stump is irritated and the diminished number of respirations is augmented again to the normal frequency, then pneumonia will not ensue. This influence of rhythm upon the production of pneumonia consists in the fact that, after cutting through the pulmonary fibres, the number of respirations decreases, but they become deeper, so that a strong negative pressure will arise at every respiration, and thereby the possibility is given to expire all from the oral cavity, so that the lungs are filled up in a short time with fluid from the mouth.

Pneumonia after bilateral section of the pneumogastrics is, therefore, a true disease arising from foreign bodies.—("Allgemeine Med. Central Zeitung," 1876, No. 96.)

On the Causes of the First Respiratory Movements (by Dr. V. Preuscher, Greifswald).—The author found by researches on pregnant animals that it was not the want of oxygen alone, but also the irritation of the atmospheric air, which gave rise to the first respiratory movements. The author is of the opinion that the atmospheric air acting upon the surface of the body, producing a sudden chilling of the skin, causes an irritation of the medulla oblongata, which stimulus gives rise to the first respiratory movements.—("Allg. Med. Cent. Zeit.," 1877, No. 3.)

On the Respiration of the Fœtus (by Professor Zweifel, Erlangen).—After having studied all the researches of different authors who examined into the amount of oxygen in the blood of the fœtus, Dr. Zweifel determined to examine the blood of the umbilical vein and artery, in order to ascertain the proportion of oxygen by means of Hoppe-Seyler's apparatus, and later on by means of a Browning's spectroscope. He found that the absorption rays of oxyhæmoglobin are evident before the first respiratory effort was made. Dr. Zweifel is therefore the first who has demonstrated the presence of oxygen in the blood of a fœtus by exact analysis.—("Archiv für Gynækologie," 1876, No. 2.)

On the Frequency of the Pulse in Fœtus (by Dr. Engelhorn).—The author discovered a connection between the frequency of the fœtal and maternal pulse. With a maternal pulse of sixty to eighty, there is a fœtal pulse of 134·9; to a maternal pulse of eighty to a hundred, a fœtal one of 143·9. The cause of this connection can hardly be understood: it is probably due to the variation of the quantity of oxygen in the blood, which has an influence upon the vasomotor nervous centre of the fœtus. As it is known that more mature subjects have a slower pulsation, Engelhorn estimates the age of the fœtus by the frequency of the pulse. He gained the following average numbers:—With a frequency of 147·9, 137·9, 126·6, in a minute, the length of the fœtus was 40·45, 45·50, and over 50 cm.—(Archiv für Gynækologie, Bd. IX. p. 360.)

On Changes of Pressure in the Radial Artery (by Dr. Riegel, of Cologne, "Berliner Klinische Wochenschrift").—While changes of pressure in the blood-vessels in the different phases of respiration can easily be recognised in animals by direct measurements, those in healthy people cannot be noted by means of the sphygmograph. It is to be supposed that these changes of pressure will be greater during difficulties of breathing. The examination of several individuals affected with laryngeal stenosis showed that, with increase of the respiratory obstruction, the respiratory changes of pressure will become more decided, and, with remission of dyspnœa, they will completely disappear. Simultaneous inspiratory diminution of the pulse (a pulsus paradoxus) could be detected during the existence of a stenosis, but it did not reach a very high grade. While the respiratory changes of pressure corresponded with the degree of dyspnœa, an equal variation was not noticed in the relations of the single pulse. —("Med. Chir. Rundschau," 1877, No. 9.)

On Respiratory Changes of the Pulse, and Pulsus Paradoxus (by Franz Riegel, Berliner Klin., Wochenschrift, 1876, No. 26).—In respect to this question, Riegel has made above 500 curves with Marey's sphygmograph. The observations showed that, the pulse growing smaller during inspiration, and longer during expiration, is not sufficient to diagnose a callous mediastino-pericarditis, because these phenomena are also observed in juvenile individuals in quiet and deep respiration. The respiratory differences can be summed up as follows:—

(1.) In healthy juvenile individuals the magnitude of pulse decreases during deep inspirations, and increases during expiration (pulsus paradoxus).

(2.) With the diminution of the pulse during inspiration the backward wave becomes more distinct and deeper, and the contrary is the case in every respiration.

(3.) Simultaneously with the diminution during inspiration, the celerity of the pulse increases and decreases with the expirations. —("Med. Chir. Rundschau," 1877, No. 9.)

On the Influence of Condensed and Rarefied Air upon the Pulse (by Riegel and Frank "Deutsches Archiv. für Klin. Med.," Bd. 17, Heft 4, 5).—According to the sphygmographic investigations made by Riegel and Frank in healthy individuals who performed Valsalva's act, the pulse-curves showed first an arterial tension and later on a considerable decrease. The pulse-curve of healthy individuals who inspired deeply, the mouth and nose being closed (Müller's trial), did not show any characteristic changes that might be satisfactorily explained; but it seems that at first there is a decrease of the lateral pressure, and of the tension in the arterial tube, and afterwards an increase of the pressure while this process is gone through with.

The pulse-curve of healthy individuals who expired into condensed air, after having inspired as deeply as possible, showed similar changes as in the Valsalva's act. The degree of condensation was $\frac{1}{40}$ atmosphere.

At the inspiration of condensed air at a pressure of $\frac{1}{40}$ atmosphere, a decrease of vascular tension was first observed. The curve later showed a marked dicrotism, with more marked appearance of elasticity of the walls of the vessel, and at last there was a gradual depression of the curve, and a diminution of the magnitude of the pulse, which soon disappeared entirely.

At the inspiration of rarefied air a certain analogy is found to the results of Müller's trial; sudden decrease, and the increase again of the pressure of the arterial blood.

On respiration into rarefied air, at a pressure of $\frac{1}{60}$ to $\frac{1}{30}$ atmospheres, after a preceding deep inspiration of common atmospheric air, a diminished tension and filling of the arteries is shown, the pulse becoming smaller and more frequent.—("Wiener Med. Wochenschrift," 1876, No. 37.)

Graphic Demonstrations of the Heart-beats in a Normal and Diseased State (by Professor Landois, Greifswald, "Verlag von Aug. Hirschwald," 1876).—The author draws attention to the fact that Professor Bamberger was the first to observe in the pulmonary tissues near to the heart a movement simultaneous with and dependent upon the heart-beats, which was explained by him to be a kind of crepitation, the systolic movement of the heart downwards, and the systolic rotation, a traction upon the neighbouring lung, and a corresponding motion of the air at the distal, a movement takes place. Landois in demonstrating this phenomenon uses the manometric flame. At the beginning of the systole an expiratory motion was observed. During that time the thorax is deprived of blood, because it passes out of it, and thereby inspiratory fluctuation is produced.

At the instant of the closure of the semilunar valves, the backward motion of the blood in the aorta and pulmonary artery produces a second expiratory fluctuation, which in some cases is double.

During the course of the diastole a further production of the expiratory fluctuation will take place.

Another way to demonstrate cardio-pneumatic fluctuations is founded upon the fact that they will produce soundings in hollow pipes.

Professor Landois devised a pneumo-cardiograph which will trace these motions in form of curves, and which can also be used in human subjects. Besides Bamberger, Lachner, Wintrich, Thornburn, Friedreich, Seitz, Richardsohn, Kirker, Skoda, Gerhardt, and Guttmann, have also reported experiments on this subject.

The second part relates to the researches of the sphygmographic curves of the heart-beat in a healthy and diseased state. Landois has found traces:—

1. The præsystolic contraction of the auricles.
2. The systole at the ventricles.
3. A distinct double elevation of the beginning of the [illegible]

descent of the curve, corresponding to the closure of the semilunar valves of the aorta and pulmonary artery, which do not occur at the same time. He further found that in an individual with 74 pulse-beats in a minute, the duration of the pause, plus the duration of the contraction of the auricles, amounts to 0·494; the duration of the cardiac systole 0·0793; the interval between both cardiac sounds 0·223, and the diastolic relaxation of the ventricles 0·092 of a second.

The examination of the curve of the normal heart-beat shows that it is a combined effect of the contraction of the auricles, the ventricles, and the closure of the semilunar valves.

In pathological states, the curve of the heartbeat can inform us of important variations in the action of the heart.—("Med. Wochenschrift," 1877, No. 20.)

Contribution on Pharyngeal Cough (by Dr. C. Spamer, of Giessen).—The author endorses Koth's and Sommerbrodt's experiments, and is opposed to Stoerk's opinion that pharyngeal cough cannot be proved from a clinical point of view. He says he has sometimes observed coughing while touching the pharyngeal mucous membrane, during which every irritation of the larynx was avoided. He is of the opinion that in these cases a considerable irritability of the sensitive nerves of the pharyngeal mucous membrane may exist, or there may be very slight irradiation of the irritation from other regions to the sensitive nerves of the larynx, or there may be a special irritability of the motor cells of the cough-centre.—("Wiener Med. Wochenschrift," 1876, No. 32.)

Contributions to the Physiology and Pathology of the Voice (by Dr. Dr. Michael at Hamburg, "Berliner Klin. Wochenschrift," 1876, No. 36, 37).—The author refers to the results of experiments of Dr. Jelenffy, made upon the action of the crico-thyroid muscle. On pressure upon the inferior border of the cricoid cartilage upon its anterior or arterial surface, a singing tone becomes higher, and during pressure upon the superior surface of the cricoid cartilage or the pomum Adami, the tone becomes lower.

Dr. Michael has repeated these experiments, and has verified them, but he does not agree with Jelenffy in the explanation of these facts. The trials made during life had the following results:—

(1.) Upon pressure on the cricoid cartilage a middle or falsetto tone becomes higher, but in the chest voice lower.

(2.) Pressure upon the pomum Adami will lower the sound of a middle and chest voice.

Besides these experimental results, Dr. Michael speaks in detail of the mode of action of the different laryngeal muscles during the tension of the vocal cords, and especially of the action of the cricoid-thyroid muscle, which is not only a tensor muscle but also sometimes a constrictor of the glottis.—("Monatschrift für Ohrenheilkunde," 1877, No. 3.)

ETIOLOGY.

A Large Fibroma of the Larynx, a Cause of Epilepsy (by Sommerbrodt).—A patient, aged 54, who suffered from epilepsy fifteen years ago, which ceased after excision of a cicatrix upon the back of the right hand, acquired a fibroma of the anterior part of the left true vocal cord, which grew rapidly until it was 1·5 cm. long, 0·6 cm. thick, and 0·9 cm. in height at the time of examination. As soon as symptoms of stenosis set in, the epileptic attacks recurred. After the large fibroma was removed by the author, the attacks ceased again. Sommerbrodt considers the epilepsy a sequel of the neoplasm.—("Berliner Klin. Wochenschrift," 1876, p. 339.)

A Case of Paralysis of the Larynx in consequence of Trichinosis (by Dr. Navratil).—The author found a complete paralysis of the epiglottis and left vocal cord, and a slight paresis of the right side, without being able to find an exciting cause for these attacks; nor did the post mortem examination show the origin of the paralysis. The microscopic examination of the laryngeal muscles showed numerous calcified trichinæ, more frequent on the left side than on the right. The infection took place eighteen years ago. Navratil thinks that trichinosis was the cause of the paralysis. The left crico-arytenoid muscle contained a large number of trichinous capsules.—("Berliner Klin. Wochen.," 1876, p. 21.)

Contribution to the Etiology of Certain Chronic Diseases of the Cardiac Valves (by Dr. Birch-Hirschfeld).—The author calls attention to an exciting cause, not heretofore mentioned, of diseases of the cardiac valves, which appears, without any definite reason, in children and infants. He quoted four cases of severe disease of the cardiac valves in girls aged from 12 to 18 years, which had probably begun in the fifth to the ninth year of life. All four patients suffered from scrofula before the beginning of the disease of the cardiac valves. Two had phthisical parents. Guided by these cases, Dr. Birch-Hirschfeld thinks that there is a connection between the scrofulous disease of the serous membranes of the joints and the endocardium, which opinion is supported by the chronic course of the endocarditis.—("Tagblatt der deutschen Naturforscher in Hamburg;" "Allgemeine Med. Central-Zeitung," 1876, p. 99.)

Pregnancy and Myocarditis (by Hauber).—The author remembers several cases of sudden death during or very soon after accouchement, from so-called exhaustion. The autopsies and investigations made by Professor Ponfick have demonstrated a connection between acute and chronic phthisical processes and acute violent myocarditis, with impoverishment of blood and reduction of red blood corpuscles.—

("Allgemeine Med. Central-Zeitung;" "Journal-Revue des Med.-Chir. Centralblattes," 1876, p. 23.)

The Condition of the Heart during Pregnancy, and the Puerperal State (by Dr. Löhnlein of Berlin).—The author was able to demonstrate anatomically and clinically, from his researches in a series of nine cases which died immediately after delivery, from a series of women in labour, and from a series of twenty pregnant women, that hypertrophy of the heart is a very rare occurrence at the end of pregnancy.

In respect to the retardation of the pulse in the lying-in condition he found it more frequently in multiparous women, and the lowest number occurred on the seventh day after delivery. The author accounts for this by the constant quiet and the recumbent posture. Besides, the important anomalies of innervation exert a great influence, which is proved by the occurrence of an intermittent pulse and accidental cardiac sounds. Fatty degeneration of the heart is often observed. In respect to the other cardiac diseases in pregnant women, the author mentions only two causes which may influence circulatory organs already otherwise affected.

1. The compression of the lungs by the diaphragm, which is pressed upwards by the pregnant uterus.

2. The increased flow of blood into the pulmonary artery; extreme changes of blood-pressure during labour must also be considered. There are very often recurrences of old endocarditis, in particular inflammation of the mitral valves during pregnancy.—("Zeitschrift für Geburtshilfe an Frauenkrankheiten," Bd. I., p. 482.)

DIAGNOSIS.

The Stethoscope of Voltolini (by Dr. Hermann Baas, of Worms).—Professor Voltolini has devised a stethoscope consisting of a flexible tube of soft india-rubber, with an attachment at one end to be introduced into the auditory meatus, and a funnel at the other end to be put upon the thoracic wall. Voltolini thinks that the practitioner will hear better with this stethoscope without being in direct contact with the body of the patient, suffering sometimes from infectious disease. But he confesses that an accidental noise will be easily produced, and advised a moistening of the fingers and auscultation upon the naked body.

Dr. Baas thinks that this instrument is not a new one, because Scott Alison's double stethoscope has the same essential parts, and he is of the opinion that an ordinary ear-plate is the best, but generally every one will hear the best with the instrument he is accustomed to use.—("Wiener Medic. Presse," 1877, No. 7.)

On Fremitus of the Heart (by Dr. Hermann Baas, of Worms).—The impulse of the heart towards the thoracic wall is not spent at once, but it is transmitted in form of rhythmic concussions of different intensity and extent, similar to the fremitus of the voice. This concussion (heart fremitus) is, under normal circumstances, to be felt more than a hand's breadth around the heart in all directions, and it is also transmitted to the sternum. It is also felt when the hand is placed under the head or the back of the patient, especially during expiration and in the intervals of respiration. The author thinks that these signs may have a diagnostic value as, for instance, in cases of malposition of the viscera, the fremitus of the heart will be felt at another place. An hypertrophy of the heart and its degree may be concluded by increased fremitus of the heart (*cor bovinum*). He considers the fremitus very valuable for the diagnosis of growths in the thoracic and abdominal cavity, and it is spread in cases of chronic inflammation of the lungs, and becomes less extended in cases of pleuritic or pericardiac effusions, and it is entirely absent in cases of migratory liver, of pneumo-thorax, and of emphysema.—(" Wiener Medic. Presse," 1876, No. 36.)

A New Illuminating Apparatus, which enables the laryngoscopist, without any further auxiliary apparatus, to demonstrate the images to a second observer (by Dr. B. Fränkel, of Berlin, "Berliner Klin. Wochenschrift," 1876, p. 16). The author gives, in this treatise, a drawing and description of a new illuminating apparatus, which enables the laryngoscopist to demonstrate the illuminated image in a clear and exact manner. He prefers a small petroleum lamp, to which he has his apparatus attached; but it can also be provided with a screw. To protect the eyes of the second observer, a metal cylinder, to ward off the light, is attached. The lens has a diameter of two inches, the mirror of three inches. The shell of the lens is movable, and can be approximated to the flame or removed from it. For auto-laryngoscopy a special plane mirror is necessary. The observer can see with both eyes, and in order to increase the intensity of the light a lens of another diameter, or a stronger light can be taken.—("Med. Chir. Rundschau," 1877, No. 1.)

A New Illuminating Apparatus (by Dr. Weil).—This little apparatus consists of a metal cylinder, easily attached to any lamp. On a level with the burner a double lens is placed, throwing the light upon a small concave mirror, which is moved by a joint, and will reflect an intense and clear light to the necessary distance. The whole apparatus is very compact.—("Allgemeine Med. Central-Zeitung," 1876, No. 93.)

Dr. Hirschberg demonstrated, at the meeting of the Berlin Medical Society, November 8th, 1876, his method of laryngoscopic examination by means of a right-angled prism placed behind the orifice of the reflector, by which an aberration of the common image is avoided, and the observer has the impression as if he saw into the larynx from behind.

Dr. Frankel pointed out the following drawbacks of this method. The image is shown in a normal situation, but the relation of mouth and pharynx are reversed, the right side is turned to the left; it also diminishes the intensity of the light, and makes it impossible to see with both eyes. These drawbacks can be removed by applying a stronger light, or two prisms.

Dr. Hirschberg also explained his *Method of Securing a Magnified Image of the Larynx.* For magnifying to a small degree he uses his *Prismatic Larynx-lens;* a prism introduced instead of a mirror; for stronger magnifying, he uses his *Laryngo-microscope,* devised according to the principle of Keppler's Telescope, which magnifies a division of the larynx eight times.—("Med. Chir. Rundschau," 1877, No. 3.)

A New Method of Examination of Alterations of the Vocal Cords (by Dr. Klemm, of Leipsic). — For examination of alterations of the vocal cords Dr. Klemm uses the *manometric flame* in the apparatus of Rudolph Kœnig, of Paris, and he showed a series of illustrations which he has gained in different changes of the vocal cords. By this apparatus Klemm thinks he has found in them characteristic symptoms, and gives a series of essential differences between diseased and healthy vocal cords.—("Archiv für Heilkunde," 1876.)

A New Pneumatometer (by Dr. Mordhorst, of Flensburg).—The author treats first of the two methods of Waldenburg for the use of pneumatometry, and demonstrates that neither afford satisfactory results. To obtain a simple constant maximum he applies a valve of soft indiarubber between the two ends of the tube, which is cut through in the middle. The valve consists of a glass tube, on one end of which an elastic band 7 mm. broad is attached at two sides by means of a thread, and by it a valve is formed which is opened at the least increase of pressure, and hermetically shut at the least decrease. The glass tube is directed towards the pneumatometer with one or the other end, according as the inspirations or expiratory power is measured. The mercurial column stops at the height corresponding to the normal power.—("Allgemeine Medic. Central-Zeitung," 1876, No. 60.)

Contribution to the Doctrine of Percussion Sound of the Thorax (by Dr. Ottomar Rosenbach).—The author sums up the following views :—

1. Changes in the pitch of the percussion sound over the lungs are found during inspiration and expiration.

2. They do not depend upon the relations of tension of the parenchyma, but upon that of the thoracic walls and muscles.

3. The changes in the pitch of the sound produced by a change of tension of the parenchyma are muffled by the thoracic walls.

4. Therefore, the change of the pitch during inspiration and expir-

ation is not applicable to the diagnosis of pathological changes of the tension of the parenchyma.

5. But altered relations of the tension of the parenchyma can be determined by the occurrence of a tympanic sound during the interval of respiration or during expiration.

6. The increased sonorous character of the percussion sound during inspiration can be applied to diagnosis.

7. Tympanitic sound arises, in limited cavities of certain magnitude, by vibrations of the air within them.

8. The perception of the tympanitic percussion sound depends upon the conductive power of the walls, which will allow the sounding waves to pass from the interior, and the percussion from without.

9. The vibrations of the walls themselves do not disturb the tympanitic sound as long as the vibrating waves can pass the walls to the surface.

10. The production of the tympanitic sound is rendered more difficult by dense and thick walls the more their surfaces are curved.

11. In percussion of curved surfaces the sound is weakened, the inner air is less movable, and the passage of the waves prevented by stronger opposition.—("Deutsches Archiv für Klin. Medicin," 1876, 6 Heft.)

Dr. Rudolph Hobein has also published an article on the subject in the same journal, in which only the change of height of percussion sound in pulmonary cavities is discussed. The author endeavoured to verify the views of Gerhardt and Wintrich by respective cases, and the results of autopsies. At the end of his treatise he sums up as follows:—

When the tympanitic percussion sound becomes more intense in a reclining posture then there is always a cavity present; when it becomes higher in sitting, then this difference of the sound can also be produced without a cavity by a greater tension of the condensed pulmonary tissue.—("Deutsches Archiv für Klin. Medicin," 1876, 6 Heft.)

On Auscultation of the Mastoid Process (by Dr. Michael, Archiv für Ohrenheilkunde, Bd. ii.).—The percussion of the mastoid process has no diagnostic value, although its auscultation is of great value. When an otoscope is placed upon the mastoid process just behind the ear and a little above the orifice of the auditory meatus, a whistling noise is to be heard while the air is blown in, and it makes the impression of having arisen very near to the ear. If the air does not enter, or the tympanic membrane is perforated, this noise is not heard at all, or only very slightly. It arises in the cavities of the mastoid process itself, and is a certain sign that air has entered the antrum and its cells.

Dr. Michael thinks he is justified in saying that when the noise is heard during life the cells of the mastoid process are filled with air and not by pathological substances; when the noise is not heard, a pathological state can be diagnosed, provided the Eustachian tube is open and the tympanic membrane not perforated. He has further proved, by experiments on the dead body, that fluid injected with a little force into the tympanic cavity will also enter the cells of the mastoid process, and will not do so if injected with greater force. When a strong current of air is introduced through the tube into the expanded tympanic cavity, then the fluid will not come into the cells of the mastoid process, whether the tympanic membrane be perforated or not. Dr. Michael therefore considers the fear ungrounded that, secretion can be forced from the tympanic cavity into the cells of the mastoid process by a strong current of air during catheterisation or by Politzer's method.—("Wiener Medic. Wochenschrift," 1876, No. 28.)

Contributions to the Diagnosis of Pulmonary Consumption (by Dr. E. Aufrecht, of Magdeburg).—Pulmonary consumption begins as an inflammatory disease of the apex of the lungs. This initial stage is not noticed, because the deposit is very small. The author has the intention of examining all patients who attend him for other purposes in respect to an infiltration of the pulmonary apex, and he recommends that this be done with all patients suffering from anæmia, anomalies of menstruation, pithyriasis versicolor, etc. The latter disease of the skin the author observed only in such patients who had rather large infiltrations, he therefore considers this symptom a very characteristic one. Other important symptoms for diagnosis of pulmonary infiltration are:—

1. Rheumatoid pains in the arms.
2. Depression of the clavicle. On the diseased side the clavicle is more depressed than in health, nay in the higher degree of tuberculous infiltration the acromial end is at the same height as the sternal one. — ("Journal-Revue des Medic.-Chir. Centralblatte," 1876, No. 12.)

Two New Symptoms of Pleuritic Adhesions (by Marten, "Berliner Klinische Wochenschrift," 1876, No. 30).—The author, after having recovered from a pleuro-pneumonia, observed—1. Spastic contractions of the upper part of the œsophagus after the stomach has been filled while eating, and these arose, according to the author's opinion, from tearing of the pleuritic adhesions connecting it with the œsophagus. 2. A sudden deep inspiration, beginning with a sudden jerk, when the patient was lying on the left side. Both symptoms disappeared in about three months.—("Allgemeine Medic. Central-Zeitung," 1876, No. 94.)

Contributions to the Pneumatic Method (by Dr. P. Biedert).—The author says that the pneumatic method is an excellent medium for the recognition of the special functional disturbances of the diseased respiratory organs. Whilst spirometry has found only a limited sphere in diagnosis, pneumatometry affords more valuable results. The author proceeds according to Waldenburg's method. In healthy individuals he found an average inspiration of 65·9 mm. and an expiration of 110·5 mm. on the pneumatometric scale.

The author found, in inflammation of the smaller bronchi and in pulmonary phthisis, that the inspiratory and expiratory power was diminished; in the former disease the expiration was most impaired, in the latter the inspiratory effort was more affected. In emphysema the inspiratory power is slightly augmented, and the expiratory one exceedingly diminished.

Pneumatometry is of great value in discovering the improvement or aggravation of a disease, which in single cases can be demonstrated on the manometer scale.

The results obtained by the use of Waldenburg's apparatus are as follows:—

(1.) The pneumatic diagnosis is a very important auxiliary to the recognition of the course of a disease.

(2.) Pneumatometry is of certain value in the diagnosis and treatment of cases of pulmonary emphysema.

(3.) Waldenburg's pneumatometer is to be used, with the mask for the mouth devised by Bredert.

(4.) That method of pneumatometry is to be preferred through which the highest pressure is gradually obtained and can be continued for a length of time.

(5.) Compressed and rarefied air can expand or contract the lungs more than any other medium.

(6.) Both promote expectoration, especially the rarefied air.

(7.) Compressed air acts as a depressent; rarefied air as a strong excitatory remedy.—("Deutsches Archiv für Klin. Medicin," 1876, 2 und 3 Heft.)

Dr. Ewald demonstrated (in the "Berliner Medic. Gesellschaft," 10th January, 1877), *his Easy Method for Determining the Nature of the Gas contained in the Pleural Cavity in Pneumothorax.* The quantity of carbonic acid in the gases contained in a pneumothorax is in an inverse ratio to that of oxygen, and if the opening remains, less carbonic acid will be found. If the opening is closed, oxygen is gradually absorbed, whilst it always re-forms if the opening remains. The analysis of the gas of the pneumothorax gives an important diagnostic sign of the condition of the perforation. If ten per cent. of carbonic acid is found, it is to be supposed that the opening is closed; if five and below, it is open. And this relation is also very important in regard to the treatment. If the perforation is not closed, a thoracentesis can be made only as a palliative measure; if it is closed, then the operation will afford a complete cure of the pneumothorax, with re-expansion of the lungs.

Dr. Ewald makes a trial puncture, and withdraws a syringe full of the gas. This is introduced into a burette filled with a solution of salt, and immersed in a flat vessel which contains the same solution. After the gas has ascended into the solution and is heated, its volume is determined. A little piece of caustic potash is put into the burette, which is closed with the finger, and inversed. The caustic potash now comes in contact with the gas, which at the same moment is deprived of carbonic acid. If the burette is now replaced and the finger removed, part of the solution in the vessel enters into the burette instead of the absorbed carbonic acid. The gas has a diminished volume, and by the difference of both volumes the volume of carbonic acid and its percentage is determined.—("Medic. Chir. Rundschau," 1877, No. 3.)

PATHOLOGY AND MORBID ANATOMY.

Amyloid Tumors at the Tongue and Larynx, a Contribution to the Doctrine of Amyloid Degeneration (by Dr. Ziegler, "Virchow's Archiv," Bd. 65).—At the post mortem of a man the author found, besides pulmonary emphysema and syphilis of the liver, several submucous round, semi-globular, prominent masses of solid, dry, nearly wood-like tissue on the tongue and in the larynx. These proved to be degenerated amyloid tissue. The nerves remained free, and the epithelium had only been attacked in very pronounced cases. The knots at the tongue and in the larynx were syphilitic gummata which had undergone amyloid degeneration. The remainder of the inflammatory process also showed a great tendency to this degeneration.

A special form of Tuberculous Disease of the Tongue (by Dr. Kuessner). —A woman, aged 25, had a swelling of the tongue during her second pregnancy. After delivery this swelling decreased and only a small sore place remained. During the next pregnancy this swelling returned and continued to increase more and more after delivery, five weeks after which death set in. A few days before death the top and back of the tongue were found deprived, for the greater part, of mucous membrane, and having the appearance of a severely granulating surface. At the right tonsil there was an ulcer. The autopsy revealed general tuberculosis, superficial ulceration of the tongue, very great infiltration of the whole tongue with small cells, but nowhere was there a trace of formation of tubercles.—("Deutsche Zeitschrift für practische Medicin.")

On a Tuberculous Ulcer of the Tongue ("Deutsche Zeitschrift für Chirurgie," vi. Bd., by W. Körte).—At Professor Lücke's clinic (Strasburg) a painful, granulating ulcer, with sharp sinuous corners at the side of the anterior part of the tongue, was observed in a man, aged 53, arising from a knot. The neighbouring tissue and the lymphatic glands were infiltrated. An ulcerated neoplasm (carcinoma or sarcoma) was diagnosed. The part was cut off by galvanocaustic wire. The wound healed very quickly, but infiltration of the lungs was rapidly developed. The piece of the tongue cut off was full of miliary tubercles. The author summarises all published cases, and advises, in opposition to many other authors, to operate as *soon as possible* ("Allgem. Medic. Central-Zeitung," 1876, No. 80.)

On Miliary Tuberculosis of the Pharynx (by Dr. B. Fränkel, "Berliner Klin. Wochenschrift," 1876, No. 46).—Dr. Fränkel has observed six cases of tuberculous disease of the pharynx. In them, ulcers have been seen on the posterior pharyngeal wall, the soft palate, uvula, and the base of the tongue, which resulted in great loss of tissue. Neither vocation, nor habits and mode of life have afforded any explanations of the production of this disease. The patients did not previously suffer from any pharyngeal affection. Whilst Isambert related cases of tuberculous ulcers of the pharynx, in which the lungs and other organs had been quite healthy, Fränkel has not seen such cases; he found in all of them a tuberculous infiltration of the apex of the lung. A few of the patients referred their first complaints to the pharynx, but he found very large tuberculous ulcers in the pharynx, and only signs of catarrhal inflammation in the apex of the lungs, and the same was the case in dead bodies, where the destruction has been found most advanced in the pharynx. In all cases in which autopsy was performed, general miliary tuberculosis was found; the ulcers had the pronounced tuberculous character, they were lenticular in shape, they were more spread on the surface than in the depth, and showed a caseous or fatty, sometimes granular, base. Their borders are irregularly erroded, fatty or caseous, and surrounded by a small inflammatory wall. In the neighbourhood there were single grey, mostly submiliary, nodules where they were denser and more confluent, and appeared as a so-called fatty infiltration.

On microscopic examination, Dr. Fränkel found isolated nodules and giant cells. Amongst the subjective symptoms, the great painfulness of these ulcers is to be mentioned. These pains also caused the difficulty in swallowing, because, besides the faucial, even the pharyngeal muscles have become swollen and inflamed. The microscopic examination showed the infiltration with small cells between the muscular layers. The ulcers generally began at the lateral walls of the pharynx, and had a transverse direction, not connected with the œsophagus, but they very often extended to the base and back of the tongue, and even to the lips. In all cases the tuberculous disease of the pharynx extended into the larynx. In two cases the larynx was free at the beginning. The fever was atonic.

In respect to the differential diagnosis, the author considers the appearance of ulcers of the pharynx characteristic enough for an exact determination of the nature of the malady. Examination of the other organs, the history, and consideration of all the diagnostic signs will be naturally of a great value. The course of the affection is generally very rapid. The tuberculosis of the pharynx leads to death from inanition in from two to six months.

The treatment consisted in sustaining the powers of the patient; the application of astringent remedies met with little success. Isambert reported favourable results from brushing the pharynx with glycerine and morphia.—("Monatsschrift für Ohren-Heilkunde," 1877, No. 1.)

A Case of Uniform Dilatation of the Œsophagus (by Dr. Silvius Stern). —At the autopsy of a man, aged 20, who died of pulmonary phthisis, having suffered from constant vomiting, the œsophagus was found dilated in its superior third, and disseminated tubercles of the size of the point of a needle were seen in the mucous membrane.

The dilatation increased as far as to the boundary of the middle and inferior third, and from there decreased again to the normal width. Whitish-grey, flat patches (1-3‴ in diameter) were found on the lower third of the œsophagus and the cardiac orifice. The stomach was distended as far down as two inches below the symphysis. The microscopic examination showed a catarrhal parenchymatous and ulcerous inflammation of the mucous membrane in different degrees.

The author thinks that œsophagitis was the primary disease, and the dilatation the secondary one. The latter might be similar to the same relations of other mucous membranes, as for instance, prolapse of the vagina, which arises in consequence of catarrh of long standing, of bronchiectatic cavities, in consequence of inflammation of the bronchial walls. As a further cause of dilatation of the œsophagus, Dr. Stern mentions paralysis of the œsophagus, especially in consequence of injury, and he points out that syphilis and alcoholism are the most probable exciting causes to a uniform dilatation of the canal.—("Archiv der Heilkunde," 1876, Heft 5.)

Dr. Riegel demonstrated (Im Aerztlichen Verein in Cöln, 28 August, 1876) a *series of uncommonly large bronchial coagulations* in a man, aged 34, who had suffered from an acute and diffuse bronchitis, and had expectorated every day coagulations of extraordinary size, width and length, and who died from the effects of dyspnœa. In these coagulations, numerous white blood corpuscles, and many crystals of charcoal, were found.—("Berliner Klin. Wochenschrift Medic.-Chir. Rundschau," 1877, No. 9.)

Endocarditis Ulcerosa (by Dr. Riegel).—The author relates the history of this case, occurring after acute pneumonia; and showed the specimen. The aortic valves had been the seat of diphtheritic endocarditis. Numerous infarcts were discovered in different other organs, especially in the kidneys. During life no cardiac symptoms were noticed. The course of the disease was very acute, fever very high. When the patient first came under observation he was suffering from a croupous pneumonia.—("Berliner Klin. Wochenschrift," 1877, No. 9.)

Professor Rühle showed (in the "Niederrheinische Gesellschaft für Natur und Heilkunde," in Bonn, 22 Jan., 1877) a *cherry-like tumor*, in the heart of a woman, situated upon the tricuspid valve. It was a soft, partly degenerated, substance, consisting chiefly of fibrinous coagulations. The endocardium and the substance of the heart were normal; nowhere were there any embolic processes found. In the right lung there was an old cirrhosis situated in the superior lobe, and traces of a more recent pneumonia were found in the inferior lobe. —("Medic.-Chir. Rundschau," 1877.)

Professor Rühle spoke, at the same meeting, of the *Myocarditis Chronica*, generally following rheumatism. Its products are found especially in the muscles of the left ventricle, as cicatrices, and discolored, dull, greyish-yellow patches. The wall of the ventricle is generally thickened. The chief symptoms during life are, enlargement of the heart, especially of the left ventricle, with diminished action and irregularly accelerated contractions. The pulse is, therefore, irregular; digitalis does not regulate its beat. Paralysis of the heart, and its consequences, chronic hyperæmia of all organs, dropsy, and finally death, will sooner or later ensue.—("Medic.-Chir. Rundschau," 1877, No. 6.)

On Endarteritis and Arteritis (by Professor Köster).—The author refutes the views heretofore held on the cause of thickening of the internal coat of the arteries, he imputing the principal part to the circulatory apparatus of the nutrient arteries, and asserting that the proliferation of the intima is independent of the endothelium. The thickening of the intima of the aorta has always a connection with deposits of connective tissue filled with nuclei, in the muscular layer. The vegetations always grow around and through the vasa vasorum, and where they are turned into capillaries in the muscular layer, there the superficial centres of inflammation are developed, which then pass on to the intima. Where endarteritic changes have occurred, there also are periarteritic ones to be met with. Therefore, he says, endarteritic processes are only found where the arteries are provided with vasa vasorum, especially in the cerebral and in the smallest pulmonary arteries. On the large arteries endarteritis can be accurately studied. The infiltration of cells extends from the muscular layer to the intima in the form of granulations, which separate the endothelium.—("Berliner Klin. Wochenschrift," 1876, No. 31.)

A Case of Embolism of the Aorta (by Dr. C. Lauenstein, "Deutsches Archiv. für Klin. Medicin," 1876, 2 and 3 Heft.)—A patient aged 40, suffered from hemiplegia of the right side, and aphasia, also irregular action of the heart; later on, the lower part of the left thigh became livid, painful and cold. Pulse could not be felt in either crural arteries; gangrene set in, and three weeks later death occurred. The autopsy revealed insufficiency and stenosis of the mitral valves, hypertrophy of both ventricles, and moderate fatty degeneration of the heart-muscles. Over the bifurcations of the aorta a solid fibrinous coagulation of the length of 3·8 cm. was found, to which a recent thrombus was adherent. This closed the orifice of the left iliac artery and of the hypogastric, and extended into the crural.—("Wiener Medic. Wochenschrift," 1876, No. 27.)

On Inflammatory Changes of the Viscera, due to Caseous Foci, produced in Animals experimented on, in reference to the question of Tuberculosis (by Dr. Max Wolff, "Virchow's Archiv," 67 Bd., 2 Heft).—A series of experiments made by the author, on guinea-pigs, showed that infections originating in caseous centres which were artificially produced, apparently led to miliary tuberculosis, but these, on careful examination, proved to be inflammatory changes. The matter injected consisted of fluids with bacteriæ and micrococci. Abscesses were developed at the place of injection, filled with caseous pus. The secondary alterations took place mostly in the lungs and liver. In the former, very numerous whitish-grey or grey knots, varying in size from the point of a needle to that of a pea, were found. Microscopic examination showed in these knots, only the products of tuberculous inflammation. All signs of miliary tubercles were wanting. The inflammatory changes which had taken place in the liver were visible to the naked eye.

Wolff concludes from his experiments that, not every caseous matter will produce miliary tuberculosis; that, not every caseous centre will produce tubercles, but for this purpose, pathological products are necessary, the nature of which is not yet defined.—("Wiener Medic. Wochenschrift," 1876, No. 37.)

On Pulmonary Abscesses (by Professor Leyden, "Berliner Klin. Wochenschrift," 1876, No. 16).—Before Laennec, pulmonary abscesses had been confounded with pulmonary gangrene or with pulmonary cavities. Traube has essentially improved the diagnosis of pulmonary abscesses, by showing the presence of microscopic fragments of pulmonary par enchyma, of elastic tissues, dark pigment and rusty-coloured crystals in the sputa. In cases of gangrene the sputa does not contain elastic fibres, and in tuberculous softening, pieces of pulmonary tissues are not to be seen at all.

According to Leyden pulmonary gangrene and abscesses are not always to be distinguished from each other, and it must be borne in mind that, simple suppuration and ulcerous softening is characteristic of pulmonary abscesses. They arise by the perforation of abscesses from without, or as true pulmonary abscesses, from emboli, metastasis, or by entrance of foreign bodies. A second form of pulmonary abscess arises during acute pneumonia in which resolution has not taken place; the grave symptoms continue, and an evacuation of a large quantity of pus takes place during the third week, after which the patient feels relieved. On microscopic examination elastic fibres, sometimes larger pieces of vessels, dark pigment, fatty crystals, micrococci of all kinds, pus and pulmonary epithelium are found.

There is also a third kind of pulmonary abscess caused by chronic ulcerations in chronically inflamed and indurated pulmonary tissue; this must be distinguished from tuberculous cavities. The sputa contained in these cases pus, mucous, elastic fibres, cicatrised pieces of parenchyma, crystals of cholestearine and mucous corpuscles.—("Journal Revue des Medic.-Chir. Centralblatter," 1876, No. 33.)

Pathological Demonstrations by Professor Buhl (communicated by E. Schweninger, Aerztliches Intelligenzblatt, 1876, No. 3).

Pneumonomycosis, Croupous Pneumonia, Phthisis.—At the autopsy of a man, æt. 57, who died from pulmonary phthisis, a large cavity was found in the middle lobe, containing gas and sarcina, which had produced the softening. In the sputa there were also sarcina, myelin, epithelium, granular cells, pus, and numerous molecules. The sarcina was smaller than it is usually found in the stomach. In the lungs themselves there were micrococci, and sarcina of the variety of Zooglœa were seen.

On Universal Plethora (by Professor Koester, Deutsche Medic., Wochenschrift).—According to the experiences at the autopsies of men who had died suddenly or from apoplexy, in whom there was an unusual hyperæmia of all the organs, and turgescence of all the vessels, with dark and thick blood and a considerable hypertrophy of the heart, the author distinguishes a genuine universal plethora, a disease *per se*. The hypertrophy is to be considered a functional one, due to the augmented quantity of blood; fatty degeneration of the heart muscles or interstitial myocarditis are always absent. Death occurs under symptoms of increased pressure of the brain. A comparison with those cases which have been named "hyper-exertion of the heart" will show that many of them belong to the section of universal plethora.—("Medic.-Chir. Rundschau," 1877, No. 6.)

Clinical Medicine.

A Case of Suppurative Parotitis as a Result of Occlusion of Steno's Duct (by Professor Senator).—A child of six months was brought to the author with a high fever, and swelling of the whole right half of the face. At the orifice of the Steno's duct a greyish-white plug was seen, which was seized with a forceps, and a long vermic [illegible] of the thickness of a needle was removed. On exact examination this body proved to be a strong feather. It is reported by Boyer that Dubois has observed a purulent parotitis with formation of a fistula, caused by a fish-bone in Steno's duct; and veterinary surgeons report that this affection very often occurs in horses, caused by a blade of straw. Strahl also reported a similar case: a soldier, aged 19 years, had an inflammation of the sublingual gland, as a result of occlusion of Bartholini's duct, by some vegetable substance. Vauquelin examined a concretion of an elephant, and found in its centre a grain of hemp-seed.—("Jahrbuch für Kinderheilkunde," Bd. X., 3 and 4 Heft.)

On Differentiation of the Wounds of the Neck (by Vogelsang, of Kiel, "Memorabilien," XX Jahrg., 1 Heft).—A girl, aged 9, was struck on the neck by the base of an exploding beer-bottle, so that a pointed piece pierced the left jugular vein. Profuse venous hæmorrhage followed; cure after eight days. But the left cheek was always of a blueish-red colour, was œdematous, and the eyelids could only be opened with difficulty; the left pupil was narrower than the right. The author thinks that these symptoms are explained by an injury of the first and second ganglion of the sympathic of the neck.—("Journal-Revue des Med.-Chir. Centralblattes," 1876, No. 46.)

The Passage of a Canula into the Trachea (by Dr. Kirchhoff).—The exterior tube of a double canula of hard india-rubber, after having been worn by a man for two years, was separated from its transverse part and fell down into the trachea. With the exception of a slight sensation of pain at the right side of the manubrium sterni, and a little difficulty in breathing, the patient was quite well. Two years later he died from pulmonary phthisis, and he had carried the canula in this position until the time of his death.—("Deutsche Zeitschrift für Pract. Medicin," 1876.)

Bronchial Croup during Typhus Fever (by Eisenlohr).—This rare complication was observed in a girl, aged 21, at Hamburg. It is very interesting to note in this case that the acute pseudomembranous bronchitis did not lead to a disturbance of respiration. The sputa consisted of ropy, viscid milk-white masses, with very fine ramifications of the bronchial tubes—("Berliner Klin. Wochenschrift," 1876, No. 31.)

Sudden Death of a Child after a Successful Tracheotomy (by Dr. Holländer, of Berlin).—The author reports a case of laryngeal croup in a well developed child of three years. Tracheotomy was successfully performed, the canula removed on the 20th day, and the child quite well again. Thirty-eight days afterwards the child made its first excursion into the country, and on the same evening it died suddenly after some little mental excitement.—("Allgemeine Medic. Central-Zeitung." 1876, No. 62.)

A Case of Tracheal Ozæna (by Benno Baginski, "Deutsche Medic. Wochenschrift," 1876, No. 25).—A boy æt. 12½ had expectorated for a long time stinking greenish matter, which at the microscopic examination by Baginski and Fränkel proved to consist of detritus, fatty degeneration of epithelium, and a large quantity of bacteriæ. Fränkel also found thyrosine crystals. There was fœtor *ex ore*, but only a slight degree of hoarseness. In the nasal and pharyngo-nasal cavity, with the exception of catarrhal swelling and redness there were no other alterations to be found, nor were any in the larynx. The alteration began below the vocal cords and extended to the trachea as far as to the ninth tracheal ring. Upon the mucous membrane of this part there was a dirty greenish-grey viscous, adherent matter, which, after having been removed by coughing and inhalation of a solution of bi-carbonate of soda, erosions of the mucous membrane were observed. The treatment (syrup of the iodide of iron internally and inhalations of a solution of carbolic acid and bicarbonate of soda) removed, for a time the secretion from the mucous membrane, but was of no avail against the affection itself.

Baginski thought that the catarrhal inflammation produced the secretion, which on account of its tenacity and viscidity remained upon the mucous membrane for a long time, became fœtid, and thus caused erosions and ulcerations. He named this disease "*ozæna laryngo-trachealis.*"

A Case of Laceration of a Vocal Cord (by Dr. Schäffer, "Deutsche Medic. Wochenschrift," 1876, No. 9).—The author treated a vocalist who was suffering from chronic laryngeal catarrh. The patient began to sing again, and his voice became very hoarse. The laryngoscopic examination showed a transverse rupture in the middle of the right vocal cord through the half of its breadth. The rupture was healed in eleven days, but a slight excavation remained; the voice returned, but chest-notes were not true, falsetto sounds were completely wanting. After four weeks the voice was again normal, but it had not its former range.—("Wiener Medic. Wochenschrift," 1876, No. 26.)

Compensation of the True Vocal Cord by the Ventricular Band (by Dr. Schäffer, Deutsche Medic. Wochenschrift, 1876, No. 9).—A phthisical woman suddenly became hoarse. The author found the right true vocal cord completely destroyed. During the act of phonation the right ventricular band reached to the border of the left true vocal cord.—("Wiener Medic. Wochenschrift," 1876, No. 26.)

Contributions to the Histology of Caseous Pneumonia (by E. Levy, of Leipzic, "Archiv für Heilkunde," No. 18).—In consequence of his investigations he came to the conclusion that it is improbable that a pneumonia quite different from the other pneumonic processes, called desquamative, should be the cause of caseous infiltration.

It is more probable that a case of catarrhal, croupous, or interstitial pneumonia may terminate in caseous degeneration.

Contribution to the Differentiation of Aphasia (by Dr. Gerhardt).—A child, aged three years, whose mother, brothers, and sisters have died from tuberculous disease, was brought into the Children's Hospital with broncho-pneumonia and pleuritic effusion. After having improved very much in the course of six weeks the child became suddenly unconscious and cyanotic. Pulse and respiration were very frequent. The next day consciousness returned, and then paralysis of the right hand and complete loss of voice was observed, which lasted until death, ten days later diagnosis of a central lesion in the left hemisphere of the brain was made.

The autopsy showed numerous tubercles in the lung and brain; the whole substance of the three inner parietal curvatures were of a greyish-red appearance, extending to a depth of 2·0 to 2·5 cm.—("Jahrbuch für Kinderheilkunde," 1876, 3 Heft.)

A Case of Congenital Stenosis of the Pulmonary Artery (by Dr. S. Weiss, "Deutsches Archiv. für Klin. Medicin," 16 Bd. 3 and 4 Heft).—A boy, aged six years, showed from birth considerable cyanosis, systolic concussion, increase of the dull percussion sound over the heart in the longitudinal and transverse diameter. At the base of the heart occasional systolic bruits were heard, the second aortic and second pulmonary sound being accentuated. The jugular vein pulsating. The boy died suddenly. The autopsy showed a considerable hypertrophy of the whole heart, especially hypertrophy and dilatation of the right ventricle. Aorta was dilated so that it had the calibre of that of an adult; the pulmonary artery had a calibre the size of a pencil. The walls of the right ventricle were 3 to 6 cm. thick. The mouth of the pulmonary artery was quite hidden in the angle between the septum of the ventricles. In this case an endo- and myocarditis occurred before the end of second month of fœtal life, which led to a cicatrised stricture of the *conus arteriosus pulmonalis*, and by obstruction of the pulmonary circulation caused the defect in the ventricular septum. The lung was here provided with blood—not through the bronchial arteries, but by a collateral circulation of the thoracic aorta. The following relations of the circulation had taken place. Only a small quantity of blood passed through the right ventricle into the pulmonary artery, a part into the left ventricle, the largest portion into the aorta which contains mixed blood. From the aorta the blood passed through the above mentioned abnormal arteries into the left lung, and by anastomosis through the trunk and the right chief branch of the pulmonary artery into the right lung. Pure arterial blood circulated in the pulmonary veins, pure venous blood in the right heart; in the left heart there was little, and in the aorta and its branches and in the lungs very much arterio-venous blood. —("Jahrbuch für Kinderheilkunde," 1876, Bd. IX., 4 Heft.)

An Observation of the Motion of a Vessel in a Pulmonary Cavity (by Dr. v. Brunn, "Berliner Klin. Wochenschrift," 1876, No. 14).—The author observed, in a phthisical woman with a small pulmonary cavity, a musical hissing, sometimes bubbling sound, either during the respiratory interval or at the interruption of respiration. This noise was synchronous with the heartbeat, and differed from the auscultatory phenomenon heard during respiration, over the cavity. This phenomenon was caused by a large artery, covered only by a thin layer, lying on the wall of a cavity, and its vibration was transmitted to the contents of the cavity. Such cases are commonly followed by fatal hæmorrhages.

Observations on Pulmonary Diseases (by Professor Gerhardt, of Würzburg).

Pulmonary Phthisis, Cardio-Systolic Sounds of Cavities.—A man suffering from advanced tuberculosis of the lungs showed, above the left clavicle, a high tympanitic percussion sound with clear Wintrich's change of sound, and a distinct cracked pot sound. These symptoms extended to the third intercostal space, and at the fourth rib the dulness of the heart began. On auscultation between the first and fourth rib there was heard—

1. Sonorous, rather high, bronchial respiration, with amphoric sounds.

2. Numerous rattling sounds.

3. A loud blowing cardio-systolic sound, accompanied by a high metallic resonance. It comes a little after the first cardiac sound, is blended with this, and slightly in advance of the pulse of the radial artery; it is more marked during expiration than during inspiration. Sometimes the noise was heard double, and then also the radial pulse was dicrotic. Sometimes it was absent, and finally it ceased altogether. The autopsy showed that the apex of the left lung throughout its whole extent was compressed to a length of 14 cm., and a width of 7·5 cm. The cavity was irregular in its outline, there were traces of trabeculæ, and prominences containing obliterated arteries were found. The sound accompanying the noise becomes resonant in a proper quantity of air. The sound probably arose in the dilated pulmonary vein in the wall of a large cavity of the left superior lobe, which was obstructed by a thrombus. The author also mentioned the case of Immermann, in which there was a sound dependant upon the action of the heart, and observed at the apex of the lungs in a few patients.—("Wiener Medic. Wochenschrift," 1876, No. 47.)

On Transitory Pneumonia (by Professor Leube, "Correspondenzblatt des Allgemeinen Aerztlichen Vereines von Thüringen," 1877, No. 4).—The author speaks of a pneumonia which lasts one day, the fever falling during the first twenty-four hours to the normal degree. He describes two cases. The diagnosis is very difficult, and thus it is very seldom made; but this form of disease essentially supports the opinion that pneumonia is not the prototype of a local inflammation, but the expression of a general infection. This transitory pneumonia should be considered the abortive form of this infection in individuals who have a resisting power against the special poison.—("Allgemeine Medic. Central-Zetung," 1877, No. 34.)

On the Progress of Pulmonary Gangrene, and on the Influence of Different Remedies upon it (by Professor Filehne, of Erlangen, aus dem "Sitzungsbericht der Physic. Medic. Societät).—Experiments have demonstrated that alkaline glycerine extracts of the sputa of pulmonary gangrene, and also filtrations of these sputa without glycerine will completely dissolve elastic tissues in from one to four days. Solution takes place in a neutral reaction only incompletely, and in acids not at all. It undergoes no change whatever in a cavity in effusions, or in the sputa, which is free from glycerine. An acid solution of pepsin effects the dissolution more rapidly, an alkaline extract of pancreatic juice more slowly. The glycerine extract of the sputa in cases of pulmonary gangrene seems to contain a digestive ferment which is identical with the trypsin discovered by Kühne. This ferment shows its influence during life by destroying elastic tissues, while connective tissue is not affected by it. Salicylic and carbolic acid destroyed the activity of the ferment by producing an acid reaction. A two per cent. solution of sulphate of quinine delayed the act of dissolving some length of time, and turpentine acts in the same manner as does thymol.

It is very doubtful whether by inhalation as much of salicylic or carbolic acid can be brought into the diseased part of the lung as to produce the acid reaction which renders the ferment ineffective; nor has quinine any more effect. Thymol and turpentine are the most efficacious.—("Wiener Medic. Wochenschrift," 1877, No. 33.)

Infiltration of the Left Superior Lobe of the Lung in Consequence of Syphilis (by Dr. Frey, at Lippspringe).—A man, aged 24, very emaciated, suffered from cough, and hoarseness of the voice. A complete dulness of the percussion sound of the left superior lobe of the lung was found, as was bronchial respiration in this part of the lung. All other parts were normal. In the mouth, the pharynx, epiglottis, and the interior of the larynx there were multiple ulcers. The patient had suffered two years ago from a primary syphilitic induration of the penis. The author ordered inunction of grey ointment; after nine days the infiltration had already decreased, the percussion sound was tympanitic, and at the end of the third week, it was quite clear; fever, cough, and ulcers disappeared in two weeks. The disease of the lung was here of a purely syphilitic nature, without phthisis.—("Allgemeine Medic. Central Zeitung," 1876, No. 52.)

The Acute Pneumonia of Infants (by Dr. Julius Steinitz at Breslau).—The author has observed during the lapse of a year-and-a-half 83 cases of pneumonia in children varying in age from 6 months to 10 years, and the experiences he obtained he reported as follows:—

1. Pneumonia attacks children of both sexes, at any age.

2. It occurs oftener at certain seasons of the year, most frequently in November, December, and April and May.

3. The maximum of pneumonic cases in children occurs in May, in adults in January.

4. The predisposing causes are:—1. Dentition; 2. Constitution and bad nutrition in general; 3. Former diseases, especially pneumonia: 4. Hereditary predisposition.

5. Unknown agents will favour the production of pneumonia without regarding accidental injuries and similar proceedings.

The author also discussed the prognosis, the morbid anatomy, the physical symptoms, and treatment of this disease.—("Allgemeine Medic. Central Zeitung," 1876, Nos. 95 and 96.)

An Intermitting Pneumonia (by Hildebrandt, Wittenberg, "Deutsche Medic. Wochenschrift," 1876, No. 49).—A recruit was brought into the hospital with high fever, rusty sputa, and crepitant râles were heard over a space, 4 cm. in diameter, at the right inferior lobe behind. The next morning the patient was quite well, but in the evening, high fever and coughing and all other symptoms returned as did the icteric discolouration of the sclera, and increased rattling sounds. After the use of large doses of quinine the fever did not return again.

A case of Peritoneal Effusion, situated above the Liver and penetrating into the Right Lung, with the Symptoms of a Pyo-pneumothorax of the Right Side (by Dr. Pfuhl, assistant to Professor Leyden's clinic in Berlin).—The author observed a girl, aged 23, with high fever and violent piercing pains in the right side of the thorax, accompanied with great dyspnœa. After a careful examination, the diagnosis of a pleuritic effusion was made, and six days later pneumothorax was observed, there being amphoric breathing and succussion sounds. Thoracentesis was performed by means of Potain's apparatus, and 1000 ccm. of a thick fœtid pus was removed, during the operation sudden dyspnœa set in and death occurred.

The autopsy revealed a cavity of the size of a child's head, which was limited by the diaphragm to the left side, by the suspensory ligament of the liver below, by the surface of the right lobe of the liver outwards, and by the union of the abdominal wall with the duodenum anteriorly. The base of the right lung was adherent to the diaphragm, and in the middle of this adhesion a fistulous opening about the size of the point of a needle was found between the air passages and the isolated cavity, as well as ulcerations of the stomach and duodenum. The author explained the course of the disease, in the following manner: the ulcer of the duodenum penetrated into the upper part of the peritoneal cavity and effected a circumscribed purulent effusion. This caused adhesive inflammation of the pleura and diaphragm, and subsequent perforation.—("Berliner Klin. Wochenschrift," 1877, No. 5.)

On Cerebral Symptoms during Hooping-Cough (by Professor Henoch, in "Berlin Charité Annalen").—In a child, aged one year, suffering from hooping-cough, epileptic spasms occurred, followed by the development of bilateral pneumonia, and symptoms of basilar meningitis. At the autopsy great hyperæmia of the brain, and meninges, and œdema of the pia mater was found. The author attributed these symptoms to intoxication by carbonic acid gas, in consequence of cough, of the laryngospasm and broncho-pneumonia. — ("Allgemeine Medicin. Central-Zeitung," 1876, No. 96.)

A Case of Mediastinal Carcinoma (by Dr. Mahl).—A woman, aged 38, had been suffering for three months from œdema of the head, the eyelids, the arms and chest. The percussion sound being dull over a large circumference at the right side of the back, the diagnosis of pleuritic effusion and consequent compression of the vena cava superior was made.

The autopsy showed a mediastinal carcinoma of the size of two heads compressing the vena cava superior, and displacing the heart.—("Allgemeine Medic. Central-Zeitung," 1876, No. 76.)

On the Influence of the Impeded Interchange of the Pulmonary Gases upon the Quantity of Nitrogen in the Urine (by Dr. H. Eichhorst, "Virchow's Archiv," 70 Bd., 1 Heft).—It has been generally held that the production of urea is proportionate to the absorption of oxygen, but Fränkel has demonstrated, by careful experiments on dogs, that the contrary is the case.

Eichhorst tried to re-establish the first opinion by clinical observations made on four children, who had been highly dyspnœic, during twenty-two to thirty-six hours, as a result of laryngeal croup, and who had been tracheotomized.

According to Fränkel, such children should secrete more urea during the dyspnœa, and the longer they had not taken food. But it was found that only very little urea was secreted during dyspnœa, even when fever was present, and that the quantity of urine itself decreased slowly to zero, and that, as soon as the breathing became freer, urea and the quantity of urine was increased. Fränkel did not consider the relation of the quantity of urine to the secreted urea. The increased secretion of urine and urea has also been seen in animals, not as the consequence of dyspnœa, but of the removal of the impediment to normal respiration. Nor has Fränkel distinguished between secretion and the production of urea.

Eichhorst thinks that urea produced in a larger quantity may remain in the blood, which assertion he intended to prove by further investigations of the blood.—("Wiener Medic. Wochenschrift," 1877, No. 21.)

Secretion of Uric Acid and the Deposit of Sediments in Croup and Pneumonia (by Scheube).—The conditions required for the formation of deposits of urates are in general cold strong concentration of the urine, increased secretion of uric acid, and great acidity.

Scheube obtained the following conclusions from his experiments in pneumonia:—

1. The absolute quantity of secreted uric acid increases and decreases with the urea.

2. The maximum of the quantity of the secreted urea and uric acid is not coincident with the highest temperature, but is reached one day after the decrease of the fever, and at a time when the dyspnœa has ceased and the affected part of the lung is again used for breathing. The increase of the secretion of the urea after the disease has disappeared is probably due to the fact that decomposition of the albuminous bodies still continues after the subsidence of the fever, and as a result of the diuresis, and finally that a certain quantity of nitrogenous substances pass into the circulation of the lungs. As a rule, the secretion of uric acid is increased in pneumonia, but the formation of sediment is only altered in its percental relation; favourable conditions are present when a urine is rich in uric acid, or of acid in general.—("Archiv. der Heilkunde," 1876, 2 and 3 Heft.)

CLINICAL MEDICINE AND SURGERY.

The Removal of Foreign Bodies from the Nose (by Apolant, "Deutsche Zeitschrift für Practische Medicin.," 1876, No. 20).—The author recommends injections of water into the nostrils of the free side, when the foreign body cannot be seized by an instrument. The pharynx is closed by the soft palate, and the water must return through the nasal meatus in which the foreign body has its seat, and thus push it forwards. In a child of two years, who had pushed a button deep into the nose, the author succeeded in removing it by this method. The injection of water from the front of the obstructed side has also been successful, but the danger of pushing down the foreign body into the pharynx is to be considered.

Staphylorraphy and Production of a Clear Voice by Advancement of the Posterior Pharyngeal Wall (by Dr. Ruthenberg, of Heidelberg). —The ordinary method of performing staphylorraphy affords an unsatisfactory result as regards the clearness of speech on account of the shortness of the velum palati and the insufficient closure of the communication between the pharyngo-nasal and oral cavities. To correct this fault many methods have been used or proposed, and the author describes the methods of Passavant, Simon, Mason, Whitehead, and Schönborn. He proposes to advance the back wall of the pharynx to the soft palate by producing a crescentic cicatrix upon this wall by means of an incision or cauterization. As a whole he recommends the method of Simon.—("Wiener Medic. Wochenschrift," 1876, No. 33, 34, and 35.)

Swallowing and Impaction in the Œsophagus of a Necrotic Nasal Bone (by Professor Max Langenbeck, of Hanover, "Memorabilien," 1877, 1 Heft.)—A woman, æt. 46, suffering from syphilitic caries of the nasal bones for four years, found herself one morning suddenly unable to swallow. On examination, by means of a bougie a solid body was found in the middle of the œsophagus, occluding it completely. After many attempts, the body was loosened a little, and at last ejected during an attack of vomiting. The mass proved to be both inferior turbinated bones, the vomer and the left nasal bones, connected firmly one with another.

On the Relation of Tracheotomy to Croup (by Schüller, "Deutsche Medic. Wochenschrift").—Tracheotomy should not be considered a *dernier ressort*, but should be performed as soon as dyspnœa occurs, in order to ensure free entrance and exit of air. The operation is the most efficacious against the danger of asphyxia, before paralysis of the nervous centre takes place.—("Journal-Revue des Medic.-Chir. Centralblattes," 1877, No. 24.)

Paralysis of the Dilator Muscles of the Larynx after Typhus Fever (by Rehn).—In consequence of a severe typhus fever two weeks after remission of the high temperature, difficulties in respiration occurred in a boy, aged 13. Four days later the laryngo-stenosis necessitated tracheotomy, and then the laryngospic examination showed a bilateral paralysis of the crico-arytenoidei postici muscles. After fifteen weeks the canula could again be removed.—("Archiv für Klin. Medic.," Bd. XVIII., 1 Heft.)

On Stricture of the Larynx by Membranous Cicatrices and by direct Adhesions of its Walls (by Photios Demetrii Photiades, "Inaugural Dissertation," Strassburg, 1876).—The author relates a case of stricture of the larynx caused by a 4 mm. thick membrane, only leaving an opening of 3 mm. in width, observed at Schnitzler's ward in the Vienna Policlinic. This case was operated on by means of multiple incisions and the introduction of a tube of hard rubber into the larynx. This induced Photiades to collect all (forty-six) cases heretofore published, and to classify them with regard to their etiology: twenty-two cases of stenosis were caused by syphilis; one by perichondritis, after typhus fever; six by injuries; fifteen cases of membranous stricture had no history. He then speaks of the symptomatology of the laryngoscopic examination, and the methods operation.

Photiades has devised an instrument by means of which sudden assistance can be afforded by cutting through the constricting membranes without performing tracheotomy. The instrument consists of a metal catheter, in connection with a guarded knife.

A Case of Formation of an Œsophageal Fistula, with Consecutive Mediastinal Abscesses (by Dr. Lürmann). — The author relates a very interesting case of injury of the œsophagus by a piece of bone. The œsophagus was perforated, and by-and-bye pus sank along it into the cavity, filling the entire posterior mediastinum and making its appearance at the superior aperture of the thorax, in the form of a fistula, on the left side of the neck. At the posterior thoracic wall a triangular dulness on percussion was found. About one pint of water could be injected through the fistula. There was regurgitation of food introduced through the tube, out of the stomach into the œsophagus. The fluid had to ascend at least 20 cm. to come from the stomach up to the place of communication of the œsophagus with the abscess. There was also a paralysis of the recurrent nerve of the left side, the fibres of the vagus nervus being injured by the pus. The patient received food only by means of a stomach-pump. The cavity of the abscess was cleaned by antiseptic injections.—("Berlin Klin. Wochenschrift," 1876, No. 19.)

Five Cases of Thoracentesis (by Schönbrod, "Aerztliches Intelligenzblatt," 1876, No. 47).—He first reports in detail five cases of pleuritic effusions observed and operated by himself, and he concludes from his experiences as follows :—

1. Thoracentesis is a life-saving operation in many cases, and will always shorten the duration of the disease.

2. The operation is in cases of serous effusion, not followed by any symptoms of reaction, nor are there, in cases of empyema, any injurious results to be feared.

3. Punction is best in cases of serous exudation, and the incision in empyema, with subsequent drainage and injection.

4. Violent pleuritic and general symptoms, if continued, and piercing pains at the side are signs of empyema.

5. Good hygienic surrounding, and regard to nutrition, ventilation, and salubrity, are of course necessary for a favourable issue.—("Allgemeine Medic. Central-Zeitung," 1876, No. 95.)

SURGERY.

Contributions to the Treatment of Deep Atheromatous Cysts of the Neck (by Professor Esmarch, "Langenbeck's Archiv," 19 Bd.).—The author prefers the punction and evacuation, to the rather dangerous extirpation of the deep atheromatous cysts of the neck. He recommends an injection, with a 1 per cent. solution of carbolic acid and injection of 10-20 grammes of a solution of iodine, which must be withdrawn again after a few minutes; this treatment can be repeated after six to eight weeks.—("Journal-Revue des Medic.-Chir. Centralblattes," 1876, No. 46.)

Cynanche Sublingualis, Cured by Injection of Carbolic Acid (by Bertels, "Deutsche Zeitschrift für Chirurgie").—A peasant, aged 23, had suffered from fever and pains during mastication and deglutition, for six days. Later on, the face became cyanotic, the tongue protruded. A dark red, hard, painless growth at the right side of the neck, extending from the angle of the inferior maxilla as far as to the clavicle, at the left of the cricoid cartilage, was seen. According to Hüter two syringe-fuls of a 2 per cent. solution of carbolic acid were injected into this swelling, and moist and warm cataplasms applied, and pieces of ice swallowed. After ten hours, breathing become free. At every following day one syringe-ful was injected. On the fifth day there was a thorough cure without suppuration.—("Journal-Revue des Medic.-Chir. Centralblattes," 1876, No. 39.)

On Establishing Artificial Anæmia during Operations on the Lips and Cheeks (by Langenbuch, "Berliner Klin. Wochenschrift," 1877, No. 14).—The author several times performed, prior to operating on the lips and cheeks, multiple acupuncture of the whole field of operations and through the entire thickness of the lips and cheeks. By it the operation could be done without any loss of blood, and the parts become insensible so that a narcosis was not necessary. This method of constriction by acupuncture might be of great service to practitioners in private operations who are obliged to operate without sufficient assistance, or when the patient cannot be put under anæsthesia.—("Weiner Medic. Wochenschrift," 1877, No. 29.)

Operation of Adenoid Vegetations of the Pharyngo-nasal Cavity by means of Flexible Sharp Spoon (by Justi, "Deutsche Medic. Wochenschrift," 1876, No. 4).—The author used a sharp spoon with a handle 3mm. thick, for scraping the œdematous vegetations of the pharyngo-nasal cavity. It can be bent in any direction so as to reach all parts, while the solidity of the instrument is sufficient to detach the growths. —("Weiner Medic. Wochenschrift," 1876, No. 29.)

Report on a Few Growths (by W. Busch).—In the medical section of the Society of the Lower Rhine at Bonn, the author exhibited a lobulated *Lipoma*, weighing 15 ounces which was removed from the retropharyngeal space of a man, aged 60. Ten years ago the patient noticed the presence of the growth, which, becoming larger, pushed up the soft palate, and finally caused a narrowing of the passage for food and air. Tracheotomy was first performed, and two weeks later a complete extirpation of this tumor undertaken; eight days after the canula was removed, and the patient dismissed as cured.—("Centralblatt für Chirurgie, Medic. Chir. Rundschau," 1877, No. 5.)

On Raising the Epiglottis and its Fixation during Laryngoscopic Examination (by Jurasz).—The author draws a thread through the median glosso-epiglottic ligament by means of a curved needle under the guidance of the laryngoscope, and thus raises the epiglottis.—("Berliner Klin. Wochenschrift," 1876, No. 18.)

A New and Simple Method of Operation on Laryngeal Polypi (by Professor Voltolini).—The author wipes off soft polypi of the diameter of about 1 cm. from the larynx, by means of a laryngeal brush, a fine sponge being firmly fixed on a wire handle. Before introduction the sponge must be moistened, and up and down movements are to be made in the larynx. Voltolini has already removed six laryngeal polypi in this way, without the mirror.—("Monatsschrift für Ohrenheilkunde," 1877, No. 2.)

Contributions to the Operation of Laryngeal Growths (by Dr. Mermagen).—The author reports five cases of laryngeal polypi operated on by him. He recommends a quick but sure operation, and suggests the use of Professor Stoerk's guillotine as very suitable for this purpose.—("Deutsche Zeitschrift für Pract. Medic.," 1876, No. 20.)

Total Extirpation of the Larynx (by Professor Maas, "Schlesische Gesellschaft für Vaterländ Cultur," May, 1876).—A carpenter, æt. 50, had suffered from carcinoma laryngis for half-a-year. Diagnosis was made by laryngoscopic examination, and was also confirmed by the microscope. Tracheotomy was first performed two weeks before the total extirpation of the larynx. The patient left his bed on the ninth day, and the hospital on the twelfth day. This operation was the seventh one performed.—("Berliner Klin. Wochenschrift," 1876, No. 32.)

Contributions to the Resection of Ribs in cases of Empyema (by Dr. Stehberger, "Aerztliche Mittheilungen aus Baden," 1876, No. 13).—The necessity of operation in pleuritic effusions by an incision is generally acknowledged, but not that of a resection of the ribs. This operation is now performed in two ways. Roser excises one piece, Simon one or more pieces of a rib. The author himself has performed resection three times successfully, two according to Roser's, and the third according to Simon's recommendation.—("Journal-Revue des Medic. Chir. Centralblattes," 1877, No. 30.)

A Blade of a Knife Carried Twenty Months in the Axilla (by Professor Doutrelepont, "Niederrheinische Gesellschaft in Bonn," May, 1876).—A strong muscular man, æt. 28, was stabbed with a knife below the left spine of the scapula, where the blade broke off. After five weeks, the wound was healed, but severe pains remained in the hand, and three months later they spread from the axilla to the breast. 6 cm. below the cicatrix a very hard place was found, pressure upon which produced violent pains, radiating into the region of the ulnar and the intercostal nerve. In March, 1876, this place was incised, under local anæsthesia, and the blade was found between the teres major and minor muscles, the point directed towards the axilla and ribs. The blade was 7 cm. long, 1·5 cm. broad, very sharp and rusty. After operation the pains disappeared entirely, the wound healing in two weeks.—(Berl. Klin. Wochenschrift," 1877, No. 3.)

MATERIA MEDICA AND THERAPEUTICS.

Contribution to the Treatment of Diphtheria of the Pharynx (by H. Weckerling, "Deutsches Archiv für Klin. Medicin.," XIX. Bd.).—The author recommends the galvano-caustic destruction of the primary centres in the pharynx as soon as possible.

On Treatment of Pharyngeal Diphtheria (by Dr. Wertheimer).—The author used, successfully, boracic acid in eight cases. He used a solution of one part of boracic acid in thirty parts of water, for gargling, and as injection once every hour. Besides this he brushed with a five per cent. solution of carbolic acid, 1·0. Quinine is given internally. Boracic acid will produce vomiting only when large quantities of it have been swallowed.—("Aerztliches Intelligenzblatt," 1877, No. 6.)

Chlorate of Potash in Saturated Solution, a Specific in Diphtheria (by Dr. Seeligmüller).—The author administers a teaspoonful every hour, night and day, of a solution of 10 grammes chlorate of potash in 200 grammes of water as long as diphtheritic spots are seen. Syrup should never be added to this solution; the fœtor from the mouth will soon disappear, the diphtheritic spots diminish, and the general state of health improve. Of fifteen severe cases he did not lose a single one, and he is fully convinced of the specific action of this remedy, when given in large doses. He relates Isambert's experience of this remedy, and his view on its physiological action.—("Jahrbuch für Kinderheilkunde," X. Bd., 3 and 4 Heft.)

On the Uses of Boracic Acid in Cases of Diphtheria (by W. Vogel).—He uses a solution of 4 to 6 grammes to 186·0 grammes water for brushing the pharynx every 1 to 2 hours. He also gives it as a gargle, and prescribes quinine for internal use as well as an inunction, with unguentum hydrargyri.—("Allgemeine Medic. Central-Zeitung," 1876, Nos. 99 to 100.)

Contributions to the Treatment of Nasal Catarrh (by Dr. Arthur Hartmann).—The author found that after insufflation of air into the Eustachian tube, by Politzer's method, acute and chronic catarrhs of the nose and pains in the forehead decreased. To explain the influence of Politzer's method upon the removal of fluids from the accessory cavities of the nose, the author made some experiments on dead bodies by filling the sphenoidal cavity with fluid. He could see it emptying during a condensation of the air in the nose. reports a few cases in which Politzer's method produced a per improvement of chronic nasal catarrh, and in particular of the head symptoms. For the removal of the adherent crusts in cases of ozœna, Hartmann recommends the use of small brushes of flexible wire, with perpendicular hairs, as in use for cleaning tobacco pipes. They are introduced in different directions and rotated, and thereby the crusts are partly loosened and partly removed, and by a succeeding injection the nasal cavity is thoroughly cleaned.—("Deutsche Medic. Wochenschrift," 1877, No. 16.)

Contributions to the Treatment of Chronic Pharyngeal Catarrh (by Dr. B. Riesenfeld, of Breslau, "Deutsche Zeitschrift für Pract. Medic.," 1877, No. 10).—According to his experience in fifty cases, the author advocates the use of the galvanocaustic treatment of pharyngeal catarrh, as recommended by Dr. Michel. By means of a sharp cautery he makes three to five incisions in the post-pharyngeal wall. There is very little pain. The eschars are very soon discharged; relapses rarely occur. — ("Prager Medic. Wochenschrift," 1877, No. 14.)

Dr. Pick reports *Two Cases of Spasm of the Glottis* in rachitic children of seven and nine months, which he has cured by the administration of the oxide of zinc, an eighth of a grain every hour, in powder.—("Allgemeine Medic. Central-Zeitung," 1876, No. 59.)

Cure of Chronic Pulmonary Phthisis (by Dr. Steinbrück, "Allgemeine Medic. Central-Zeitung"). — The author thinks that pulmonary phthisis, in the first stage, can be cured by suitable inhalation of a sufficient quantity of nitrogen; in the second stage improvements, and even cures, are obtained as they have never been heretofore. The younger the patient, the better they will endure the withdrawal of oxygen and the more certain is the result. In the third stage of pulmonary consumption and blenorrhœa, the inhalation of nitrogen is dangerous. Without any exception, every successful treatment of pulmonary phthisis must take its origin from the quieting of the nervous system. The physical examination of the chest with the spirometer shows the interesting progress of cure.—("Journal-Revue des Medic.-Chir. Centralblattes, 1876, No. 45.)

On the Action of Artificially Rarefied Air in Pulmonary Diseases (by Dr. Trentler).—He used in his cases an additional quantity of nitrogen to the atmospheric air, and he gets it in a simple ratio by desoxygenisation of the air. Nitrogen is collected in a gasometer, then mixed with atmospheric air in Waldenburg's pneumatic apparatus, and then used for inhalation. The quantity of oxygen can be determined and also the quantity which shall be applied in every case. The inhalation is made under higher or lower pressure, by which the antiphlogistic action is augmented. The author has had the best results by this method in different diseases of the lungs.—("Berliner Klin. Wochenschrift," 1876.)

INDEX.

*** References to entire Reports and their Sections are printed in *italics*, and the names of their Authors in SMALL CAPITALS.

PAGE

A.

Abscesses, pulmonary (Leyden) . . . 394
  retropharyngeal, in children (Bokai) 364
Adenoid vegetations in the pharyngo-nasal cavity (Ganghofner) . . 358
  —(Justi) 406
Adenopathy (tubercular) (Parrot) . 191
Adoption, practice of, in Japan . . 13
Æthiops mineralis in pertussis (Chiricozzi) 95
Afanassieff, embolic infarctus . . . 113
Ainos of Japan 5, 8
Air, amount of, in school-rooms . . 131
  on the action of artificially rarefied, in pulmonary diseases . . 409
  on the influence of condensed and rarefied, upon the pulse (Riegel and Frank) 380
  compressed, physico-mechanical effects of 168
  —effect of, upon the circulation (Mosso) 74
Air-passages, on the paradox pulse in cases of stenosis of the large (Petrina) 363
Albert, amputation of the tongue, on account of a large tuberculous tumour, which was considered a carcinoma 370
Albertazzi (Sante), pleuritic effusion treated successfully by compression of the healthy side of the thorax 82
Albrecht (R.) supernumerary semilunar valves of the heart . . . 104
Alcohol, use of 316
Algeria, phthisis in (Feuillet) . . . 253
Alkaloids, action of some, upon the heart (Peyrani) 72
Allantois, the, a vascular organ (Cadiat) 153
Altitude and disease (Macpherson) . 319
Amburger, movability of the first rib 110
America, see *United States.*
Amyl, nitrite of, action of (Brunton) 314
  —use of, in carbonic oxide poisoning (Maximovitsch) 126

PAGE

Amyl, nitrite of—*continued.*
  —inhalation of, and its effects upon the respiratory products and upon the blood (Jolyet and Regnard) . 243
Amyloid degeneration, contribution to the doctrine of (Ziegler) . . 390
  tumors at the tongue and larynx (Ziegler) 390
Anæmia common in China 37
  fatty degeneration of the heart in pernicious (Howard) . . . 54
  on establishing artificial, during operations on the lips and cheeks (Langenbuch) 406
  cerebral, after tapping in cases of empyæma (Leudet) 239
Anæmic murmurs (Peacock) . . . 305
Anæsthesia of the larynx (Ott) . . 358
  —mechanism of (Bernard) . . 169
Anasarca, drainage tubes for (Southey) 310
Anatomy and physiology of the thoracic organs, etc.—
  —*in the United Kingdom* . 256-266
  —*in Austria* 324-339
  —*in France* 151-174
  —*in Germany* 377-383
  —*in Italy* 70-75
  —*in Russia* 105-109
Anatomy, morbid, see *Pathology.*
Anderson (McC.), curability of acute phthisis 301
ANDERSON (W.), *Report on Japan.* 1-23
Aneurism, sphygmographic tracings in (Mahomed) 306
  effects of the galvanic current upon the arterial wall of an (Martino). 98
  electrolysis in (Franzolini) . . . 98
  cure of (Dobell) 307
  of frequent occurrence among seamen (Faber) 322
  from embolism (Goodhart) . . . 282
  —(Bryant) 282
  external, in Japan 15
  and heart disease in the army (Curran) 269
  of the abdominal aorta (Stiller) . 361
  of the aortic arch treated success-

PAGE

Aneurism—*continued.*
fully by electro-puncture (Verardini) . . . 99
—of the ascending aorta and arch of the aorta, bilateral paralysis of the recurrent laryngeal caused by an (Klein) . . . 344
aortic, accompanied by symptoms of Cheyne-Stokes's respiration (Sacchi) . . . 86
—case of (Hinchcliff) . . . 63
—(Roddick) . . . 54
—distal ligature in cases of (Heath) 307
—caseous pneumonia and (Haust) 174
—treated by electrolysis (Homans) . . . 146
of the thoracic aorta treated with electric puncture (Omboni) . . 98
intra-thoracic, case of (Wilks) . . 306
thoracic, case of (Johnson) . . . 307
—(Dolan) . . . 281
—(Balfour) . . . 282
—(Moore) . . . 282
—(Hayden) . . . 282
of a coronary artery (Irvine) . . 283
of the innominate artery treated by external galvanisation (Gallozzi) 98
of branches of pulmonary artery (Osler) . . . 54
arterio-venous, of the left carotid and the jugular vein (Mazzoni) 84
of the heart (Legg and Ormerod) . 271
Angina diphtheritica, treatment of (Lindemann) . . . 374
Angrisani, bromide of potassium in heart affections . . . 96
Anhidrotics in pulmonary phthisis (Hayden) . . . 315
Annelli, influence of hæmoptysis in the development of phthisis . . 81
Antiseptic agents in cases of phthisis (Yeo) . . . 300
Aorta, pretended absorbents of the (Langhaus) . . . 153
lymphatics in the (Stroganoff) . . 108
rupture of the (McDowall) . . . 283
—sudden death through (Kahler) . 349
effect of over-work on the heart and (Barr) . . . 266
researches on the differences of tension between the left ventricle and the (Gradle) . . . 333
aneurism of the (Hayden) . . . 283
—case of (Hinchcliff) . . . 63
—(Roddick) . . . 54
—distal ligature in cases of (Heath) 307
—caseous pneumonia and (Haust) 174
—accompanied by symptoms of Cheyne-Stokes's respiration (Sacchi) . . . 86
—treated by electrolysis (Homans) 146
case of embolism of (Lauenstein) . 393
abdominal, aneurism of the (Stiller) . . . 361
thoracic, aneurism of, treated

Aorta—*continued.*
with electro puncture (Omboni) . . . 98
Aortic arch double (Watson) . . . 260
—aneurism of the, treated successfully by electro-puncture (Verardini) . . . 99
Aortic disease (Moore) . . . 283
—(Barr) . . . 283
insufficiency (Cockle) . . . 306
regurgitation, cases of (Fabre) . 196
sinuses, position of the, and the flaps of the aortic valve . . . 257
valve, rupture of the (Orton) . . 307
Apex murmurs, diagnostic value of (Taylor) . . . 308
Aphasia, contribution to the differentiation of (Gerhardt) . . . 398
with mitral stenosis (Duroziez) . 174
Aphonia from laryngeal paralysis (Yeo) . . . 309
nervous (Jaccoud) . . . 217
Apolant, removal of foreign bodies from the nose . . . 403
Apomorphia, hydro-chlorate of (David) . . . 244
Archer, adherent pericardium . . . 280
Arlidge, diseases incident to the manufacture of pottery . . . 268
weather and mortality in the British Islands . . . 318
Arrigo Maroni, pleurisy with fibrinous effusion . . . 81
Arterial pulsation, intermission of (Franck) . . . 183
tension (Sibson) . . . 260
Arterio-venous aneurism of the left carotid and the jugular vein (Mazzoni) . . . 84
Arteritis and endarteritis (Köster) . 393
Artery, cellular elements in the internal coat of an inflamed (Stroganoff) . . . 110
carotid, contributions to the anatomy of the ramifications of the (Zuckerkandl) . . . 326
coronary, aneurism of a (Irvine) . 283
crural, on double sound and double noise on the (Bamberger) 339
innominate aneurism of the, treated by external galvanisation (Gallozzi) . . . 98
pulmonary, aneurism of (Finlayson) . . . 282
—(Franks) . . . 283
—embolism of the (Massari) . . 86
—fat-embolism of the, after a gunshot wound (Boettcher) . . . 123
—fatal embolism and thrombosis of the (Porter) . . . 140
—embolism of fat in the (Heschl) 347
—case of congenital stenosis of the (Weiss) . . . 398
—stenosis of the (Galton) . . . 285
—thrombosis of the left . . . 346

PAGE

- Artery—*continued.*
  - radial, on changes of pressure in the (Riegel) 379
- Asphyxiated blood, oxidation in (Stroganoff) 108
- Aspiration in the treatment of pleural effusion (Pepper) 135
  - in pleuritic effusion (Foster) 296
  - —(Clark) 295
- Asthma in Japan 20
  - chronic (Mader) 360
  - bronchial, inhalations of ipecacuanha wine in (Ringer and Murrell) 315
  - mountain, called Mal de Puna 320
  - nervous, silver, its effects and use in (Curci) 96
  - —cases of (Wahltuch) 303
  - bronchiale neurosum, cases of (Brunner) 115
  - renal (Johnson) 285
- Asystole (Rigal) 198
- Atheromatous cysts of the neck, contributions to the treatment of (Esmarch) 405
- Atherton, cases of tracheotomy 51
- Atkinson, quinsy 289
- Atmospheric pressure, influence of increased, on the system (Macpherson) 319
- Atropia, action of, on the heart (Brunton) 314
  - administration of, in the treatment of phthisis pulmonalis 133
  - and morphia, antagonism of (Corona) 96
- Aufrecht, contributions to the diagnosis of pulmonary consumption 388
- Auricle, inflammatory growth in the left (Dreschfeld) 281
  - clot in the left (Moxon) 281
- Auriculo-ventricular valves, function of the (Lurmay) 158
- Auscultation of the mastoid process (Michael) 387
  - plessimetrical (Guéneau de Mussy) 185
- Australia, *Report by* J. WILLIAMS 56-63
- Austria and Hungary, *Report by* P. LANGER 324-376
  - *anatomy and physiology* 324-339
  - *diagnosis* 339-342
  - *pathology and morbid anatomy* 342-350
  - *clinical medicine* 350-370
  - *surgery* 370-371
  - *materia medica and therapeutics* (pneumato-therapeutics) 371-376
- Axilla, blade of a knife carried twenty months in the (Doutrelepont) 407

B.

- Baas, the stethoscope of Voltolini 384
  - on fremitus of the heart 384
- Baginski, a case of tracheal ozœna 397

PAGE

- Baker (Wm.), flexible tracheotomy tubes 288
- Balfour, cardiac thrombosis 281
  - thoracic aneurism 282
- Bamberger, on double sound and double noise on the crural artery 339
- Barlow, case of acute tuberculosis in a child 272
- Barnes, fits of sneezing during pregnancy 286
- Barr, effect of over-work on the heart and aorta 266
- Bartholow, treatment of certain forms of phthisis pulmonalis by rest and by the internal administration of atropia 133
- Bathing, hot, in Japan 10
- Becker, on diphtheria with regard to the character of epidemic in Vienna 350
- Beeby, epidemic of diphtheria at Bromley 279
- Beggars' houses in China 32
- Bell, cases of free incision in empyema 293
- Belladonna in phthisis (Fothergill) 313
- Bennett, case of empyema treated by Lister's antiseptic method 294
- Benson (J. S.), diphtheria treated with chlorine water 51
- Berger, on the occurrence of ganglion cells in the heart of the craw-fish 324
- Berkart, dilatation of the pulmonary capillaries 279
- Bernard, mechanism of anæsthesia 169
- Bernheim, cardiac affection in the absence of all valvular lesion 195
  - pulmonary congestion in rheumatic fever 204
  - pneumonia 209
  - pneumo-thorax 213
  - digitalis in heart disease 249
- Bert, physico-mechanical effects of compressed air 168
- Bertels, cynanche sublingualis cured by injection of carbolic acid 406
- Berthelot, absorption of free nitrogen by vegetables, under the influence of atmospheric electricity 173
- Beveridge, phthisis among the granite masons of Aberdeen 268
- Biedert, contributions to the pneumatic method 388
- Biliary salts, action of digitalis compared with that of the (Feltz and Ritter) 247
- Billotti, twenty-six cases of diphtheria 93
- Biot, case of Cheyne-Stokes's respiration 201
- Birch-Hirschfeld, contribution to the etiology of certain chronic diseases of the cardiac valves 383
- Bistroff, spasmodic inspiration 114

PAGE
Bizzozero, lymphatics in the human pleura 72
  morbid anatomy of diphtheria . 77
Blood, inhalation of amylic nitrite, and its effect upon the (Jolyet and Regnard) 243
  molar movements of the human body produced by the circulation of the (Gordon) 260
  respiratory capacity of, in the febrile state (Mathieu and Maynan) 193
  oxidation in asphyxiated (Stroganoff) 108
  post mortem appearances of the, found in the heart (Lancereaux) 239
  serum of, as a therapeutic agent (Vacher) 312
Blood-pressure,effect of,on the rhythm of the heart (Tschiriew) 106
Bochefontaine, faradisation of the heart 160
  absence of phthisis in the ape . . 255
Boettchér, fat-embolism of the pulmonary artery after a gun-shot wound 123
Bokai, on retropharyngeal abscesses in children; on retropharyngealis lymphadenitis 364
Bonne, production of leucocytes . . 193
Boracic acid, on the uses of, in cases of diphtheria (Vogel) 408
Boudet and Chauveau, respiratory sounds 163
Bowditch, thoracentesis in cases of empyema 296
Bozzolo, double cardiac impulse, and double venous pulse 86
Bradbury, case of slow pulse . . . 259
Brain, suppuration in the, following the cure of empyema (Pye Smith) 295
  see *Cerebral.*
Bramwell, intrathoracic tumour . . 280
Brandeis, revision of Dr. Langer's report 324
Breathing of old men, physiology of (Hutchinson and Geist) . . . 335
  in old people, frequency and rhythm of 335
Breathing, mouth, and its consequences (Cassells) 297
Brigidi, case of enlarged thymus gland 80
Broadbent, Cheyne-Stokes's respiration 291
  case of effusion into the left pleural cavity 294
Bronchial asthma, cases of (Brunner) 115
  —inhalations of ipecacuanha wine as a spray in (Ringer and Murrell) 315
  coagulations, series of large (Riegel) 392
  croup, on a case of (Sidlo) 353
  —during typhus fever (Eisenlohr). 396

PAGE
Bronchial mucous membrane, application of carbolic acid and creasote in spray to the (Imlay) . . 315
Bronchitis frequent in Japan . . . 18
  statistics of, in British Kaffraria 47
  chronic pseudo-membranous (Lucas-Championnière) 212
  crouposa, on (Chvostek) 354
  —a case of genuine acute (Hajek) 353
Broncho-pneumonia in Japan . . . 18
Bronchocele, etiology of, in the Puy de Dôme 179
  females affected in excess of males (Hicks) 266
  acute, with cardiac hypertrophy occurring during pregnancy . . 138
Bronchotomy, on (Winiwarter) . . 367
Bronchus, a mutton-bone causing gangrene of lung (Coats) 279
  foreign body in the left (Maunder) 308
Browne (Lennox), suffocative goitre 290
  post-nasal catarrh 290
  respirator veil 312
Brugelman, treatment of pulmonary consumption 127
Brunn, observation of the motion of a vessel in a pulmonary cavity . 399
Brunner, cases of asthma bronchiale neurosum 115
Brunton (T. Lauder), action of atropia 314
  action of nitrite of amyl 314
  physiological action of Casca bark 314
  causes of sleep 265
Bryant, aneurism from embolism . . 282
Buda-Pest, communications from the Hospital for Children in (Wittmann) 346
Buhl, pathological demonstrations . 395
Bulgheri, internal laryngeal operations 91
Busch, report on a few growths . . 406

C.

Cadiat, venous system 153
  the allantois, a vascular organ . 153
  structure of the lung 154
  and Robin, structure of the endocardium 151
Calvet, acute morphinism 252
Cameron, tracheotomy 291
Campbell, primary cancer of the pleura 279
Canada, *Report by* W. OSLER . . 51-55
Cancer in females, geographical distribution of, in England and Wales (Haviland) 320
  mediastinal,aphonia from laryngeal paralysis (Zeo) 399

PAGE
Cancer—*continued.*
  primary, of the lungs (McAldowie) 280
  —of the pleura (Campbell) 279
Cancerous sarcocele and phthisis (Picard) 178
Cancrum Oris in China 37
Cantharidine, action of, on the heart (Peyrani) 72
Cantilena, mediastino-pericarditis caseosa 84
Capillaries, pulmonary, dilatation of, (Berkart) 279
Carbolic acid, hypodermic injections of, for the cure of phthisis (Schnitzler) 371
  —(Hirschfelder) 372
  cynanche sublingualis cured by injection of (Bertels) 406
Carbolic acid spray in catarrhal affections of the respiratory organs (Moritz) 127
  —applied to the bronchial mucous membrane (Imlay) 315
Carbonic oxide poisoning, use of nitrite of amyl in (Maximovitsch) 126
Carcinoma, relation of psoriasis of the tongue to (Nedopil) 338
  case of mediastinal (Mahl) 402
  case of supposed 370
Cardiac affection in the absence of all valvular lesion (Bernheim) 195
  — chronic (Girgensohn) 120
  —action of quinine in (Mercurio) 73
  bruit in chorea (Clark) 305
  — (Jenner) 305
  disease, slow pulse in (Russell) 259
  disturbance, sclerema attended by (Harley) 284
  embolus (Lancereaux) 186
  hypertrophy, acute bronchocele with, occurring during pregnancy (Roberts) 138
  impulse, double, and double venous pulse (Bozzolo) 86
  lesions in the insane (Dufour) 187
  murmurs, modification of (Cuffer) 180
  muscular action (Chirone) 71
  pulse, correlation between the, and the sex of the fœtus (Mattei) 104
  systole, mechanism of the (Laborde) 158
  thrombosis (Balfour) 281
  valves, contribution to the etiology of certain chronic diseases of the (Birch-Hirschfeld) 383
  extra-, blowing sounds (Reynard) 180
  intra-, cyst, case of (Holden) 146
  see *Heart.*
Cardio-pneumatic sounds, contributions to the differentiation of the (Kahler) 362
Cardiograph (Rothe's) 332, 342
Caries of the sacrum 346
Carotid artery, contributions to the

PAGE
Carotid artery—*continued.*
  anatomy of the ramifications of the (Zuckerkandl) 326
  pulse (Tripier) 182
Carre, nervous hæmoptysis 208
Cartilages (costal) in phthisis (Thompson) 273
  laryngeal, contribution to the doctrine of fractures of (Scheff) 356
Casca-bark, physiological action of (Brunton) 314
Cassells, mouth-breathing and its consequences 297
Catarrh, snuff for (Neall) 286
  common in Japan 18
  chronic pharyngeal, contributions to the treatment of (Riesenfeld) 409
  nasal, contributions to the treatment of (Hartmann) 408
  post-nasal (Lennox Browne) 290
  see *Cold.*
Catarrhal affections of the respiratory organs (Moritz) 127
  inflammation, changes in the mucous membrane covered by ciliated epithelium occurring in (Possadsky) 111
  pneumonia, chronic, in the apex of the lungs of children (Fleischmann) 359
Catheterism and mechanical dilatation in laryngo-stenosis (Labus) 91
Cayley, case of empyema 294
Cells in endarteritis, origin of (Stroganow) 175
  endothelial (Salvioli) 80
  giant (Colomiatti) 79
  —in tubercle 269
Cellular elements in the internal coat of an inflamed artery (Stroganoff) 110
Cerebral anæmia after tapping, in cases of empyæma (Leudet) 239
  symptoms during hooping-cough (Henoch) 402
  —see *Brain.*
Champneys, statistical tables of complications of rheumatic fever 310
Charcot, sudden death from pneumogastric stimulation 179
Chauveau and Boudet, respiratory sounds 163
Chauveau and Savart, experiments on the theory of respiration 165
Cheadle, rapid action of the heart 260
Chest, gaseous tumour on the anterior aspect of the (Lippencott) 134
  on the influence of the position of the body upon the results of examination of the (Rollet) 340
  influence of school-life upon the development of the (Lessgaft) 131
  pain in the, of obscure origin (Stocker) 310
Chest diseases, deaths from, in Eng-

PAGE

Chest diseases—*continued.*
  land in 1874, one-third the total of deaths from all causes . . . 318
Cheyne's croup 278
Cheyne-Stokes' respiration (Ross) . 53
  —(Biot) 201
  —(Bradbury) 259
  —(Broadbent) 291
  —(Wharry). 292
  —(Treves) 292
  —accompanying aortic aneurism (Sacchi) 86
China, *Report by* R. A. Jamieson 25-39
Chiricozzi, Æthiops mineralis in pertussis 95
Chirone, cardiac muscular action . . 71
Chloral (croton), use of, in heart disease (Liebreich) 315
  —in night-cough of phthisis (Yeo) 315
Chlorine water in the treatment of diphtheria (Benson) 51
Chorea, cardiac bruit in (Clark) . . 305
  —(Jenner) 305
Chromic acid in syphilitic affections of the mouth and larynx (Pospeloff) 129
Church, case of pneumothorax . . 297
Chvostek, on bronchitis crouposa . 354
Cicutin, action of (Dujardin-Beaumetz) 245
Circulation, action of quinine upon the (Mosso) 73
  effect of compressed air upon the (Mosso) 74
  effects on the, from the use of Esmarch's bandage (Gamgee) . . 313
  encephalic, effects of the arrest of (Couty) 170
  of the blood, molar movements of the human body produced by the (Gordon) 260
Circulatory system, diseases of the, in Japan 14-17
Cirrhosis of lung (Ross) 52
Clark, aspiration in pleuritic effusion 295
  cardiac bruit in chorea 305
Cleland, recovery in a case of embolism affecting the right lung and kidney 145
Climate, effects of, in disease . . . 319
  for phthisis 298
  —(Yeo) 300
  —(Thorowgood) 300
  powerless to prevent consumption . 56
  of Australia for consumptives . 56-63
  of British Kaffraria 40-46
  of Colorado for consumptives (Kennedy) 55
  of Japan 2-5, 23-24
  of Spain 64-69
Climatology *of the United Kingdom* 317-323
  of France 253-254
Clinical medicine of diseases of the thoracic organs, etc.—
  in the United Kingdom . . 285-312

PAGE

Clinical medicine—*continued.*
  in Austria 350-370
  in France 193-234
  in Germany 395-408
  in Italy 80-93
  in Russia 114-125
Clot in the left auricle (Moxon). . 281
  in the left ventricle (Thompson) . 281
Clothing of the Japanese 9
Coats, a mutton bone in a bronchus causing gangrene of lung and simulating phthisis 279
Cochineal, use of, in hooping cough (Nicholson) 315
Cockle, aortic insufficiency . . . 306
Codeine, action of, on the heart (Peyrani) 72
Coen, on phonophobia 356
Coghill, case of œsophageal fistula . 296
Cold (a) and its cure (Styrap) . . 285
  —(Wood) 286
  see *Catarrh.*
Colliers' black-spit (Gairdner) . . . 268
Collins, pistol-ball wound of the thorax 149
  stab in the thorax 150
Colomiatti, researches on giant-cells 79
Colorado as a health resort for consumptives (Kennedy) 55
Concubinage in Japan 13
Consumption, sea-sickness in (Faber) 302
  and climate (Cotton) 323
  —(Pearse) 323
  pulmonary, treatment of (Brugelman) 127
  —contributions to the diagnosis of (Aufrecht) 388
  see *Phthisis.*
Cook (G.R.), diphtheria treated with chlorate of potash and hydrochloric acid 51
Cor bovinum (Moore) 283
Cormack, diphtheria and croup . . 276
"Cornage," or roaring respiration (Follin and Duplay) 184
Corona, antagonism of morphia and atropia. 96
Coronary artery, aneurism of a (Irvine) 283
Coryza speedily cured (Davide) . . 95
Costal cartilages in phthisis (Thompson) 273
Cotton, consumption and climate . . 323
Cough, causes of (Stoerk) 328
  night, of phthisis, use of croton chloral in (Yeo) 315
  pharyngeal, contribution on (Spamer) 382
  winter, inhalation of ipecacuanha wine in (Ringer and Murrell) . 315
Couty, effects of the arrest of encephalic circulation 170
Crawfish, on the occurrence of ganglion-cells in the heart of the (Berger) 324

PAGE
Creasote, application of, in spray to the bronchial mucous membrane (Imlay) . . . 315
Croton chloral, use in heart disease (Liebreich) . . . 315
  in night cough of phthisis (Yeo) . 315
Croup, cases of (Ryan) . . . 287
  —(James) . . . 287
  statistics of, in British Kaffraria . 48
  treatment of (Higgins) . . . 286
  tracheotomy in cases of . . . 310
  —(Schüller) . . . 404
  not a disease (Cormack) . . . 277
  the word should be abolished (Cormack) . . . 277
  bronchial, on a case of (Sidlo) . . 353
  —during typhus fever (Eisenlohr) 396
  —see *Bronchitis crouposa* .
  of the larynx in a child aged ten months (Winiwarter) . . . 352
  and diphtheria (Cormack) . . . 276
  —(Sansom) . . . 277
  —(Greenhow) . . . 278
  —(Kennedy) . . . 278
  —(Lori) . . . 353
  —differential diagnosis of (Stewart) 148
  —tracheotomy in . . . 287
  —(Cameron) . . . 291
  and pneumonia, secretion of uric acid and the deposit of sediments in (Scheube) . . . 403
Croupous pneumonia (Buhl) . . . 395
Crural artery, on double sound and double noise on the (Bamberger) 339
Cuca leaf, use of . . . 317
Cuffer, modification of cardiac murmurs . . . 180
Cullingworth, pulmonary hæmorrhage 276
Curci, silver, its effects and use in nervous asthma . . . 96
Curran, aneurism and heart disease in the army . . . 269
Cutler, ulcer of the frenum linguæ in hooping-cough . . . 149
Cyanides, use of, in the treatment of rheumatic arthritis (Lelu and Lugan) . . . 247
Cyanosis, causes of . . . 193
Cylindroma of the lungs (Heschl) . 347
Cynanche sublingualis cured by injection of carbolic acid (Bertels) 406

D.

David, hydrochlorate of apomorphia 244
Davide, coryza speedily cured . . 95
Day, Australian climate for consumptives . . . 63
Day, (H.) cases of exophthalmic goitre . . . 290
Delthil, diphtheroid ulcer in hooping cough . . . 178

PAGE
Devonshire, death rate from consumption in (Pease) . . . 323
Dew-Smith and M. Foster, effects of the constant current on the heart 258
Diabetes and pneumonia (Lécorché) 210
  and tubercle (Lécorché) . . . 211
Diagnosis of the thoracic organs, etc.
  —*in Austria* . . . 339-342
  —*in Germany* . . . 384-390
  —*in Italy* . . . 75-76
  —*in Russia* . . . 109-110
Dickinson, utility of iodine injections in cases of empyema . . 294
Digitalis, action of, compared with that of the biliary salts, on the pulse, arterial tension, respiration and temperature (Feltz and Ritter) . . . 247
  injection of, into a vein (Lombard) 249
  in heart disease (Bernheim) . . 249
Digitaline, action of on the heart (Peyrani) . . . 72
Diphtheria, treatise on (Sauné) 220-234
  considered as an infectious disease (Ferrini) . . . 94
  Dr. Ghiglia's views relating to. . 89
  in Auchtergaven (Yeats) . . . 279
  at Bromley (Beeby) . . . 279
  in China . . . 37
  with regard to the character of epidemic in Vienna (Becker) . . 350
  a rare case of (Dubay) . . . 352
  meningitis in (Pierret) . . . 192
  case of, with concurrent paralysis (Tymaczkowski) . . . 351
  therapeutics of . . . 372
  treatment of (Billotti) . . . 93
  —(Fera) . . . 93
  —(Pavesi) . . . 94
  —(Marchionneschi) . . . 94
  —(Merlini) . . . 94
  —(Luzinsky) . . . 373
  —in the hospitals of Vienna . . 373
  on the uses of boracic acid in cases of (Vogel) . . . 408
  chlorate of potash in saturated solution a specific in (Seeligmüller) . . . 408
  treated with chlorate of potash and hydrochloric acid (Cook) . . . 51
  treated with chlorine water (Benson) . . . 51
  treatment of, with ice (Strohmayer) 373
  use of neurin in cases of (Ludwig) 330
  treated with tincture of iodine (Grant) . . . 51
  morbid anatomy of (Bizzozero) . . 77
  of the pharynx, contribution to the treatment of (Weckerling) . . 408
  —(Wertheimer) . . . 408
Diphtheria and croup (Cormack) . . 276
  —(Sansom) . . . 277
  —(Greenhow) . . . 278
  —(Kennedy) . . . 278
  —(Löri) . . . 353

PAGE

Diphtheria and croup—*continued.*
  —differential diagnosis of (Stewart) 148
  —tracheotomy in 287
  — — (Cameron) 291
Diphtheritic ulcer of the œsophagus 345
Diphtheroid ulcer in hooping-cough (Delthil) 178
Diseases of the circulatory system in Japan 14-17
  of the respiratory organs in Japan 17-23
Dobell, cure of aneurism 307
Dobushinsky, endocarditis ulcerativa 112
Dolan, thoracic aneurism 281
Donati, laryngo-stenosis; paralysis of nervus laryngeus recurrens; laryngotomy 89
Doutrelepont, a blade of a knife carried twenty months in the axilla 407
Dover's powder, its use in checking the sweating of phthisis (Hayden) 315
Drainage tube for anasarca (Southey) 310
Dreschfeld, inflammatory growth in the left auricle 281
Dropsy, geographical distribution of in England and Wales (Haviland) 320
Dubay, a rare case of diphtheria . . 352
Duckworth, apertures in the septum ventriculorum 256
Dudgeon (J.), on the diseases of China 31-33
Dufour, cardiac lesions in the insane 187
Dujardin-Beaumetz, action of cicutin 245
Duplay and Follin, "cornage" or roaring respiration 184
  hæmothorax 234
Duroziez, mitral stenosis, aphasia, right hemiplegia in women . . 174
Dyspnœa following acute bronchocele with cardiac hypertrophy (Roberts) 138

E.

Earthquakes in Japan 3
Eastes, treatment of empyema . . 293
Eberman, case of empyema . . . 122
Ecchymoses, subpleural (Girard) . . 242
Echinococcus, case of, near the larynx (Heine) 364
Eckert, tuberculous pneumonia in the 22nd Infantry Regiment . . . 337
Effusion: see *Pleural* effusion, *Pleuritic* effusion.
  fibrinous, pleurisy with (Maroni) . 81
  peritoneal, case of (Pfuhl) . . . 401
EGAN (C.), *Report on British Kaffraria* 40-50
Egan (R. W.), ossification or calcification of the heart 284
Eichhorst, on the influence of the impeded interchange of the pulmonary gases upon the quantity of nitrogen in the urine . . . 402

PAGE

Eisenlohr, bronchial croup during typhus fever 396
Elam, foreign matters in the lung . 268
Electric stimulation of the heart (Marey) 160
Electricity, atmospheric, absorption of free nitrogen by vegetables under the influence of (Berthelot) 173
Electro-puncture as a treatment for aneurisms 98-99
Electro-therapeutics of the thoracic organs, etc., *in Italy* . . . 97-99
  in throat affections (Jaschtschenko) 129
Electrolysis in aneurism (Franzolini) 98
  aortic aneurism treated by (Homans) 146
  naso-pharyngeal polypus cured by (Viganoni) 97
Elliot, univentricular heart. . . . 256
Embolic infarctus (Kossuchin) . . 113
  —Afanassieff 113
Embolism, case of, in Japan . . 15-16
  affecting the right lung and kidney, recovery in a case of (Cleland) 145
  aneurism from (Goodhart) . . . 282
  —(Bryant) 282
  of the aorta, case of (Lauenstein) . 393
  of the pulmonary artery, in consequence of elastic compression of both lower extremities (Massari) 86
  of fat in the pulmonary arteries (Heschl) 347
  —after a gun-shot wound (Boettcher) 123
  pulmonary (Lancereaux) . . . 205
  fatal, and thrombosis of the pulmonary arteries (Porter) . . . 140
Embolus, cardiac (Lancereaux) . . 186
Emphysema, etiology of 178
  in Japan 20
  local treatment of (Polansky) . . 376
  treatment of pulmonary (Pircher) 375
  cutaneous, in consequence of the opening of a pulmonary cavern into the intercostal space (Galli) 83
Empyema, case of (Eberman) . . . 122
  —(Wright) 294
  —two cases of (Dickinson) . . . 294
  —case of (Cayley) 294
  —case of (Peacock) 295
  —two cases of (Hall) 296
  —case of suppuration in the brain and spinal cord following the cure of (Pye-Smith) 295
  case of, in Japan 19
  contribution to the resection of ribs in cases of (Stehberger) . 407
  cerebral anæmia after tapping in cases of (Leudet) 239
  cases of free incision in (Bell) . . 293
  —(Eastes) 293
  —(Fraser) 293

PAGE
Empyema—*continued.*
 —(Ticehurst) 293
 treated by Lister's antiseptic method (Skerritt) 293
 —(Bennett) 294
 thoracentesis in cases of (Bowditch) 296
 thoracentesis and drainage of the pleural cavity in a child (Winiwarter) 368
Encephalic circulation, effects of the arrest of (Couty) 170
Endarteritis, origin of cells in (Stroganow) 175
 and arteritis (Köster) 393
 pulmonalis diphtheritica 345
Endoarteritis chronica deformans (Stevenson) 284
Endocarditis rare in Japan 14
 with multiple embolics of arteries 346
 ulcerativa (Dobushinsky) . . . 112
 —(Loewy) 112
 ulcerosa (Riegel) 392
 gonorrhœic (Marty) 174
Endocardium, structure of the (Robin and Cadiat) 151
Endothelial cells (Salvioli) 80
Engelhorn, on the frequency of the pulse in fœtus 379
Epiglottis, on raising the, and its fixation during laryngoscopic examination (Jurasz) 407
Epilepsy, fibroma of the larynx, a case of (Sommerbrodt) . . . 383
 the heart in (Magnan) 200
Epithelia, on some flat, in the animal kingdom (Tourneux and Hermann) 157
Epithelium, ciliated, changes in the mucous membrane covered by, occurring in catarrhal inflammation (Possadsky) 111
Eppinger, anatomical contribution to the communication of Professor Ritter's case of a hiatus lateris sinistri thoracis congenitus . . 342
 an obliteration of the vena cava ascendens by a contracting cicatrix 349
Ergotin, hypodermic injection of . 372
Erythrophlœin a cardiac poison (Gallois and Hardy) 249
Esmarch, contributions to the treatment of deep atheromatous cysts of the neck 405
 effects on the circulation from the use of his bandage 313
Ether, failure of the heart during inhalation of (Morton) 309
Etherization in young children (Tripier) 250
Ethylic bromide (Rabuteau) . . . 251
Etiology of diseases of the thoracic organs, etc.—
 in the United Kingdom . . 266-269
 in France 174-180

PAGE
Etiology—*continued.*
 in Italy 77
 in Germany 383-384
Eucalyptus, effect of leaves and flowers of, on the atmosphere 63
Ewald, easy method for determining the nature of the gas contained in the pleural cavity in pneumothorax 389
Exostosis upon the first rib (Hulke) 262

F.

Faber, sea-sickness in consumption 302
 influence of sea voyages . . . 322
 pathology of sea life 322
Fabre, on the intervention of stenosis in regurgitant disease . . . 196
Falsetto voice, theory of the (Illingworth) 263
Faludi, Geiza, three cases of thoracentesis 369
Faradisation of the heart (Bochefontaine) 160
Farquharson, industrial phthisis . . 268
Fat-embolism of the pulmonary artery after a gun-shot wound (Boettcher) 123
Fea, latent pleurisy 186
Febrile state, respiratory capacity of the blood in the (Mathieu and Maynan) 193
Feeling, on the perception of, during percussion (Hein) 339
Feltz and Ritter, action of digitalis, compared with that of the biliary salts, on the pulse, arterial tension, respiration, and temperature 247
Fera, eighty cases of diphtheria . . 93
Ferrini, treatment of diphtheria . . 94
Feuillet, phthisis in Algeria . . . 253
Fibrinous effusion, pleurisy with (Maroni) 81
Fibroma of the larynx a cause of epilepsy (Sommerbrodt) . . . 383
Fieber, hypertrophy of the vocal cords 356
Filehne, on the progress of pulmonary gangrene, and on the influence of different remedies 400
Finlayson, aneurism of the pulmonary artery 282
Finny, intrathoracic tumour . . . 279
 thoracic tumour 280
Fistula, œsophageal, case of formation of an (Lürmann) 405
 —case of (Coghill). 296
Flax, workers in, diseases of (Purdon) 268
Flax-dust, injurious effects on the lungs from the inhalation of (Purdon) 268
Fleischmann, symptoms of intoxication in a child after the admi-

PAGE

Fleischmann—*continued.*
  nistration of tinctura veratri viridis 330
  chronic catarrhal pneumonia in the apex of the lungs of children 359
Foa, on tuberculosis 78
Fœtus, correlation between the cardiac pulse and the sex of the . 104
  on the respiration of the (Zweifel) 379
  on the frequency of the pulse in (Engelhorn) 379
Follin and Duplay, "cornage," or roaring respiration 184
  hæmothorax 234
FONMARTIN (H. DE), *Report on France* 151-255
Food of the Japanese 10
Foot, diffuse caseation of the lungs, subsequent to hæmorrhagic pleural effusion 272
Foreign bodies, removal of, from the nose (Apolant) 403
Foreign body in the left bronchus (Maunder). 308
  —see *Knife*, *Mutton-bone.*
Foreign matters in the lung (Elam) 268
Forensic medicine—
  in France 239-243
  in Italy 102-103
Forjett's timbrometer 261
Foster (B.), aspiration in pleuritic effusion 296
Foster (M.), slow pulse of jaundice . 259
  and Dew-Smith, effects of the constant current on the heart . 258
Fothergill, belladonna in phthisis . 313
Fox (Wilson), visceral syphilis . . 275
France, *Report by* H. DE FONMARTIN 151-255
  anatomy 151-157
  physiology 158-174
  etiology 174-180
  semiotics 180-186
  pathology and morbid anatomy 186-193
  clinical medicine 193-234
  surgery 234-239
  forensic medicine 239-243
  materia medica and therapeutics 243-253
  climatology 253-254
  miscellaneous 254-255
Franchi, respiratory gymnastics . . 99
Franck, effects on the heart, respiration, and circulation, of the stimulation of sensitive nerves. . 158
  variations in the volume of the heart 159
  discharge of the heart 159
  intermission of arterial pulsation . 183
Frank and Riegel, on the influence of condensed and rarefied air upon the pulse 380
Fränkel, a new illuminating apparatus, which enables the laryngoscopist to demonstrate the images to a second observer 385

PAGE

Fränkel—*continued.*
  on miliary tuberculosis of the pharynx 391
Franklyn, pus removed from left pleura by means of a trochar . 295
Franz-Josef Hospital for Children, reports from the (Neureutter and Salmon) 345
Franzolini, electrolysis in aneurism . 98
Fraser (D.), empyema treated by paracentesis 293
Fremitus of the heart (Baas) . . . 384
Frey, infiltration of the left superior lobe of the lung in consequence of syphilis 400
Führbringer's views on the laryngeal muscles 377
Fungi, atmospheric, acute tonsillitis dependent on (Norbury) . . . 266
Fungus pertussis (Samer) 110

G.

Gairdner, colliers' "black-spit" . . 268
Galli, cutaneous emphysema in consequence of the opening of a pulmonary cavern into the intercostal space 83
Gallois and Hardy, erythrophlæin a cardiac poison 249
Gallozzi, aneurism of the innominate artery treated by external galvanisation. 98
Galton, stenosis of the pulmonary artery 285
Galvanisation, effect of, in the treatment of aneurisms 98
Galvanism, treatment of nervous asthma by 115
Galvano-cautery, nasal polypus removed by (Mucci) 93
Gamgee, effects on the circulation from the use of Esmarch's bandage 313
Ganghofner, remarks on the doctrine of the heart-impulse 332
  on adenoid vegetations in the pharyngo-nasal cavity 358
Ganglion-cells, on the occurrence of, in the heart of the craw-fish (Berger) 324
Gangrene, pulmonary, on the progress of (Filehne) 400
  of the lung (Walker) 314
Gardner, fatty degeneration of the heart in pernicious anæmia . 54
Garrigou, etiology of bronchocele in the Puy de Dôme 179
Gas in pneumothorax, analysis of a (Kretschy) 348
Gastritis crouposa 345
  subacute, caused by drinking Saké 12
Geist, physiology of breathing in old people 335

PAGE

Gellé, a means of ascertaining that a new-born child has not breathed 242
Gelseminum sempervirens, action of (Ringer and Murrell) 313
Gerhardt, observations on pulmonary diseases 399
contribution to the differentiation of aphasia 398
Germany—*Report by* P. Langer 377-409
—*anatomy and physiology* . . 377-383
—*etiology* 383-384
—*diagnosis* 384-390
—*pathology and morbid anatomy* 390-395
—*clinical medicine* 395-493
—*clinical medicine and surgery* 403-405
—*surgery* 405-408
—*materia medica and therapeutics* 408-409
Ghiglia, on diphtheria 89
Ghinozzi, four cases of pneumonia . 80
Girard, subpleural ecchymoses . . 242
Girgensohn, case of chronic cardiac affection 120
Gland, case of enlarged thymus (Brigidi) 80
Glottis, two cases of spasm of the (Pick) 409
Goître, on the cause of (Klebs) . . 337
occlusion of the right innominate vein by a substernal (Kretschy) 348
in China 37
exophthalmic (Hicks) 266
—cases of (Day) 290
—(Yeo) 291
suffocative (Lennox Browne) . . 290
Golay, anomaly of the lung . . . 225
Gonorrhœic endocarditis (Marty) . . 174
Goodhart, visceral syphilis 274
suppurative inflammation of the mediastinum 281
aneurism from embolism . . . 282
Gordon, molar movements of the human body produced by the circulation of the blood . . . 260
Gould, recovery from pyopericardium 281
tricuspid stenosis 306
Gowers, mitral disease 308
Gradle, researches on the differences of tension between the left ventricle and the aorta 333
Grancher, pulmonary lymphatics . . 154
tubercular granulation 190
Granite masons of Aberdeen, phthisis among the (Beveridge) . . . 268
Grant, diphtheria treated with tincture of iodine 51
Graves's disease (Russell) 290
females affected in excess of males (Hicks) 266
Green, visceral syphilis 274
Greenfield, hydatid of lung . . . 308
Grellet, treatment of phthisis with hypophosphite of soda . . . 301
Gregorelli, new laryngo-tracheotom . 92

PAGE

Grossmann, a case of lupus of the larynx 357
Guéneau de Mussy, plessimetrical auscultation 185
Gun-shot wound, fat embolism of the pulmonary artery after a (Boettcher) 123
Gussenbauer, extraction of a large pocket-knife out of the œsophagus by œsophagotomy 370
Gymnastics, respiratory (Franchi) . 99

H.

Hæmoptysis, importance of (Mazzotti) 77
in phthisis (Wilks) 302
influence of, in the development of phthisis (Annelli) 81
on the relation of to pulmonary phthisis (Heitler) 336
hypodermic injections in cases of (Hirschfeld) 372
inhalation of Mount-Dore water for (Lassalas) 253
nervous (Carre) 208
Hæmorrhage, disposition to, among invalids at sea 322
tendency to, in women (Hicks) . . 266
into the pericardium (Jackson) . . 283
pulmonary (Cullingworth) . . . 276
Hæmorrhagic small-pox, respiratory system in (Osler) 53
Hæmothorax (Follin and Duplay) . 234
Hænisch, expansion of the lung-apex in pulmonary phthisis 109
Hajek, a case of genuine acute bronchitis crouposæ 353
Hall (F. de H.), two cases of empyema 296
Hall (J. C.), effects of trades on the workmen. 267
Hampeln, sarcoma pulmonum. . . 122
Hardy and Gallois, erythrophlæin, a cardiac poison 249
Harley (J.), sclerema attended by cardiac disturbance. 284
Hartmann, contributions to the treatment of nasal catarrh 408
Hauber, pregnancy and myocarditis 383
Haust, caseous pneumonia and aortic aneurism 174
Haviland, geographical distribution of heart disease and dropsy . . 320
Hayden, case of intrathoracic aneurism 282
aneurism of the aorta 283
anhidrotics in pulmonary phthisis 315
Health-resort, Colorado as a, for consumptives (Kennedy) 55
see *Climate.*
Heart, average weight of the . . . 256
variations in the volume of the (Franck) 169

PAGE

Heart—*continued.*
- rapid action of the (Cheadle) . . 260
- effect of blood-pressure on the rhythm of the (Tschiriew) . . 106
- supernumerary semilunar valves of the (Albrecht) 105
- effect of irritation of the cardiac nerves on the (Habershon) . . 264
- on the trabecular tissue of the (Zuckerkandl) 324
- examination of fifty human and other animal hearts (Paladino) . 70
- cases of univentricular (Elliot) . 256
- excessive slowness of the (Vigouroux) 254
- on a case of adhesion of the, with the pericardium (Weiss) . . . 361
- discharge of the (Franck) . . · 159
- mechanism of the sounds of the (Williams) 258
- reduplication of the first sound of the (Johnson) 258
- effects of the constant current on the (Foster and Dew-Smith) 258
- electric stimulation of the (Marey) 160
- faradisation of the (Bochefontaine) 160
- effects on the, respiration and circulation, of the stimulation of sensitive nerves (Franck) . . 158
- action of some alkaloids upon the (Peyrani) 72
- action of atropia upon the (Brunton) 314
- failure of the, during inhalation of ether (Morton) 309
- wounds of the (Yemans) . . . 147
- on fremitus of the (Baas) . . . 384
- parasitic disease of the, in Japan . 17
- valvular diseases of the, in Japan 14
- malformation of the (Moore) . . 270
- aneurism of the (Legg and Ormerod) 271
- endoarteritis chronica deformans, and its relation to rupture of the (Stevenson) 285
- ossification or calcification of the (Egan) 284
- fatty degeneration of the, in Japan 15
- —in pernicious anæmia (Howard) 54
- rupture of a fatty, after a blow (Tamburini) 102
- post-mortem appearances of the blood found in the (Lancereaux) 239
- condition of the, during pregnancy and the puerperal state (Löhnlein) 384
- in epilepsy (Magnan) 200
- and aorta, effect of over-work on the (Barr) 266
- affections, bromide of potassium in (Angrisani) 96
- beats, graphic demonstrations of the, in a normal and diseased state (Landois) 381

PAGE

Heart—*continued.*
- disease, aneurism and, in the army (Curran) 269
- —digitalis in (Bernheim) 249
- —geographical distribution of, in England and Wales (Haviland) 320
- —use of croton chloral in (Liebreich) 315
- —in children (Jenner) 305
- impulse, remarks on the doctrine of the (Ganghofner) 332
- movements, on graphic demonstration of the (Ott) . . . 332-342
- sounds, reduplication of (Johnson) 306
- see *Cardiac.*

Heath, distal ligature in cases of aortic aneurism 307

Hein, on the perception of feeling during percussion 339

Heine, case of echinococcus near the larynx 364

Heitler, on the relation of hæmoptysis to pulmonary phthisis . . . 336
- symptoms of incipient pulmonary phthisis 340
- on the treatment of pleurisy, and its causes 369

Hemiplegia, right, in women with mitral stenosis (Duroziez) . . 174

Henoch, on cerebral symptoms during hooping-cough 402

Hepatic affections and pleurisy (Petit) 178

Hepatisation of lung (White) . . . 275

Hermann and Tourneux, on some flat epithelia in the animal kingdom 157

Heschl, on a cylindroma of the lungs 347
- embolism of fat in the pulmonary arteries 347

Hicks (Braxton), sex as a cause of disease; exophthalmic goitre; tendency to hæmorrhage in women 266

Higgins, treatment of croup . . . 286

Hildebrandt, an intermitting pneumonia 401

Hinchcliff, case of aortic aneurism 63

Hirschberg, method of laryngoscopic examination 385
- method of securing a magnified image of the larynx 386

Hirschfeld, hypodermic injections in cases of hæmoptysis 372

Hirschfelder, hypodermic injections of carbolic acid in phthisis of the lungs 372

Histology of the thoracic organs, etc., in the *United Kingdom* . . 269-285

Hobein, on the doctrine of percussion sound of the thorax 386

Hoisel, thoracentesis with favourable result 368

Holden, new instrument, called a "resonator" 136
- case of intracardiac cyst 146

PAGE
Holder, effects of lead-inhalation . . . 268
Holhorn, treatment of diphtheria . . . 373
Holländer, sudden death of a child after a successful tracheotomy . . . 396
Homans, aortic aneurism treated by electrolysis . . . 146
Hooping-cough, pathogenesis of (Tschamer) . . . 338
  treatment of . . . 126
  —(Porter) . . . 149
  called the "hundred-day cough," in Japan . . . 18
  Æthiops mineralis in (Chiricozzi) 95
  use of cochineal in (Nicholson) . . . 315
  on cerebral symptoms during (Henoch) . . . 402
  ulcer of the frenum linguæ in (Cutler) . . . 149
  diphtheroid ulcer in (Delthil) . . . 178
Howard, fatty degeneration of the heart in pernicious anæmia . . . 54
Hulke, exostosis upon the first rib . . . 262
Hungary, see *Austria.*
Hunt, paracentesis pericardii . . . 305
Hutchinson, physiology of breathing of old men . . . 335
Hydatid of lung (Greenfield) . . . 308
  —(Bird) . . . 308
Hydrochloric acid in the treatment of diphtheria (Cook) . . . 51
Hydrops pericardii in Japan . . . 15
Hydro-therapeutics in pulmonary phthisis (Sokolowsky) . . . 129
Hydrothorax in Japan . . . 19
Hygiene,—
  in Italy . . . 99-102
  in Russia . . . 131-132
  public, in Japan . . . 12
Hyoscyamine in the treatment of disease . . . 316
Hypertrophy of the vascular system (Saundby) . . . 284
  of the vocal cords (Fieber) . . . 356
Hypodermic injections in cases of hæmoptysis (Hirschfeld) . . . 372
  of carbolic acid for the cure of phthisis (Schnitzler) . . . 371
  —(Hirschfelder) . . . 372
  of ergotin . . . 372
Hypophosphites, use of, in cases of phthisis . . . 299
  —(Yeo) . . . 299
  —(Thorowgood) . . . 300

I.

Illingworth, the human voice . . . 263
Illuminating apparatus, a new (Weil) 385
  —which enables the laryngoscopist to demonstrate the images to a second observer (Fränkel) . . . 385
Imlay, application of carbolic acid

PAGE
Imlay—*continued.*
  and creasote in spray to the bronchial mucous membrane . . . 315
Influenza, statistics of, in British Kaffraria . . . 49
Inhalation of amylic nitrite (Jolyet and Regnard) . . . 243
Inhaler, patent pocket . . . 312
Innominate vein, occlusion of the right, by a substernal goître (Kretschy) . . . 348
Insane, cardiac lesions in the (Dufour) 187
Inspiration (spasmodic), case of (Bistroff) . . . 114
Intercostal muscles (Rutherford) . . . 262
Intoxication, symptoms of, in a child after the administration of tinctura veratri viridis (Fleischmann) 330
Intrathoracic tension (Peyrot) . . . 236
  tumour (Finny) . . . 279
  —(Bramwell) . . . 280
  —(Smith) . . . 280
Iodine (tincture of), diphtheria treated with (Grant) . . . 51
Iodine injections in cases of empyema (Dickinson) . . . 294
Ipecacuanha, inhalations of, as a spray in winter cough and bronchial asthma (Ringer & Murrell) . . . 315
Irvine, aneurism of a coronary artery 283
Italy, *Report by* A. WAHLTUCH . 70-104
  —*anatomy and physiology* . . . 70-75
  —*diagnostics* . . . 75-76
  —*etiology* . . . 77
  —*pathology* . . . 77-80
  —*clinical medicine and surgery.* 80-93
  —*materia medica and therapeutics* . . . 93-97
  —*electro-therapeutics* . . . 97-99
  —*hygiene* . . . 99-102
  —*legal medicine* . . . 102-103
  —*bibliography* . . . 103-104
  —*miscellaneous* . . . 104
Ivanowsky, parasites in the lungs of small pox patients . . . 111

J.

Jaccoud, cyanosis . . . 193
  nervous aphonia . . . 217
Jackson, hæmorrhage into the pericardium . . . 283
James (S.E.), antipyretic treatment of pneumonia . . . 135
James (T.), cases of croup . . . 287
JAMIESON (R. A.), *Report on China* 25-39
Japan, *Report by* W. ANDERSON . 1-23
Jaschtschenko, electro-therapeutics in throat affections . . . 129
Jaundice, slow pulse of (Foster) . . . 259
Jelenffy, voice without vocal cords . 355
JELLY (W.), *Report on Spain* . . 64-69
Jenner, rachitis . . . 302

PAGE

Jenner—*continued.*
heart disease in children 305
cardiac bruit in chorea 305
Jinrikisha, a Japanese vehicle . . 6
Johnson (Geo.) reduplication of the sounds of the heart . . . 258, 306
renal asthma 285
cases of pneumonia. 289
case of thoracic aneurism . . . 307
Jolyet and Regnard, inhalation of amylic nitrite, and its effects upon the respiratory products and upon the blood 243
Jones (Handfield) cases of slow pulse 259
Jurasz, on raising the epiglottis and its fixation during laryngoscopic examination 407
Justi, operation of adenoid vegetations of the pharyngo-nasal cavity by means of flexible sharp spoon 406

K.

Kaffraria (British), *Report by* C. Egan 40-50
Kak'ke (beriberi) in Japan . . 14, 15, 18
Kahler, atrophic kidney; hypertrophy of the left ventricle; sudden death through rupture of the aorta . 349
obliteration of the vena cava ascendens by a thrombus 350
contributions to the differentiation of the cardio-pneumatic sounds 362
Kelemen, on migratory pneumonia . 359
Kidney, recovery in a case of embolism affecting the right lung and (Cleland) 145
atrophic (Kahler) 349
King William's Town, British Kaffraria,—Meteorology and diseases of the respiratory organs in . 40-50
Kirchhoff, passage of a canula into the trachea 396
Klebs, on the cause of goître . . . 337
Klein, bilateral paralysis of the recurrent laryngeal, caused by an aneurism of the ascending aorta and arch of the aorta 344
Klemm, a new method of examination of alterations of the vocal cords 386
Knife, extraction of a pocket, out of the œsophagus by œsophagotomy (Gussenbauer) 370
blade of a, carried twenty months in the axilla (Doutrelepont) . 407
Körte, on a tuberculous ulcer of the tongue 390
Kossinsky, extirpation of the larynx. 124
Kossuchin, researches on embolic infarctus 113
Köster, on endarteritis and arteritis . 393
on universal plethora 395
Kretschy, occlusion of the right innominate vein by a substernal goître 348
analysis of a gas in pneumothorax 348
Kuessner, special form of tuberculous disease of the tongue . . 390
"Kuro-shiwo," warm ocean current of Japan 2
Küttner, researches on pulmonary epithelium 378

L.

Labial tubercle (Ledenta) 192
Laborde, mechanism of the cardiac systole 158
Labus (C.), new portable laryngoscope 75
catheterism and mechanical dilatation in laryngo-stenosis . . . 91
Laennec's treatise on mediate auscultation 180
Lancereaux, tubercle not to be ranged under the head of tumours . . 188
pulmonary embolism 205
cardiac embolus 186
post mortem appearances of the blood found in the heart . . . 239
Landois, graphic demonstrations of the heart-beats in a normal and diseased state. 381
Langenbeck, swallowing and impaction in the œsophagus of a necrotic nasal bone 404
Langenbuch, on establishing artificial anæmia during operations on the lips and cheeks 406
Langer, *Report on Austria and Hungary* 324-376
Report on Germany 377-409
Langhaus, pretended absorbents of the aorta 153
Laryngeal cartilages, contribution to the doctrine of fractures of (Scheff) 356
growths, contributions to the operation of (Mermagen) . . . 407
operations, internal (Bulgheri) . . 91
paralysis (Poyer) 218
—aphonia from (Yeo) 309
bilateral paralysis of the recurrent laryngeal, caused by an aneurism of the ascending aorta and arch of the aorta (Klein) . 344
polypi, new and simple method of operation on (Voltolini) . . . 407
symptoms in a case of thoracic aneurism (Johnson) 307
tuberculosis, on (Ott) 357
Laryngitis, tracheotomy in cases of (Cameron) 291
syphilitic, mercurial treatment of (Schulgovsky) 125

PAGE

- Laryngitis syphilitic—*continued.*
  - —tracheotomy in a case of (Thornton) 288
- Laryngo-microscope 386
- Laryngo- and tracheo-stenoses, contributions to the diagnosis and therapeutics of (Schnitzler) 367
- Laryngoscopic examination on raising the epiglottis, and its fixation during (Jurasz) 407
  - —illuminating apparatus for (Fränkel) 385
  - — —(Weil) 385
  - — —(Hirschberg) 385
- Laryngospasm, remarks on, and its treatment (Sidlo) 353
- Laryngotomy, case of (Donati) 89
- Laryngo-tracheotom (Gregorelli) 92
- Laryngo-stenosis (Donati) 89
  - catheterism and mechanical dilatation in (Labus) 91
- Laryngoscope, new portable (Labus) 75
- Larynx, contributions to the anatomy of the (Rüdinger) 377
  - external and internal examination of the (Schiltoff) 109
  - method of securing a magnified image of the (Hirschberg) 386
  - influence of the vagus upon the (Habershon) 263
  - pathology and therapeutics of the 103
  - extirpation of the (Kossinsky) 124
  - total extirpation of the (Maas) 407
  - paralysis of the dilator muscles of the, after typhus fever (Rehn) 404
  - paralysis of the, in consequence of trichinosis (Navratil) 383
  - on stricture of the, by membranous cicatrices, and by direct adhesions of its walls (Photiades) 404
  - amyloid tumours at the tongue and (Ziegler) 390
  - on anæsthesia of the (Ott) 358
  - chromic acid in syphilitic affections of the mouth and (Pospeloff) 129
  - croup of the, in a child aged ten months (Winiwarter) 352
  - case of echinococcus near the (Heine) 364
  - fibroma of the, a cause of epilepsy (Sommerbrodt) 383
  - case of lupus of the (Grossmann) 357
  - tracheotomy improvised for the removal of a pin from the (Marcacci) 92
- Larynx-lens, prismatic 386
- Lasègue, pleurisy 215
- Lasinsky, treatment of hooping-cough 126
- Lassalas, inhalation of Mount Dore water for hæmoptysis 253
- Lauenstein, case of embolism of the aorta 393
- Laveran, tubercular ulcer 192
- Lead-inhalation, effects of (Holder) 268
- Lécorché, pneumonia and diabetes 210
  - tubercle and diabetes 211

PAGE

- Ledenta, labial tubercle 192
- Lederer, treatment of diphtheria 373
- Lees, transposition of viscera 265
- Legal medicine—
  - *in France* 239-243
  - *in Italy* 102-103
- Legg and Ormerod, aneurism of the heart 271
- Lelu and Lugan, double cyanide of potassium and zinc 247
- Lesions, cardiac, in the insane (Dufour) 187
- Lessgaft, influence of school life upon the development of the chest 131
- Letzerich, fungus pertussis 110
- Leube, on transitory pneumonia 399
- Leucocytes, production of (Bonne) 193
- Leudet, cerebral anæmia after tapping in cases of empyema 239
- Levy, contributions to the histology of caseous pneumonia 397
- Leyden, on pulmonary abscesses 394
- Liebreich, use of croton chloral in heart disease 315
- Lindemann, treatment of angina diphtheritica 374
- Lipoma, lobulated (Busch) 406
- Lippencott, case of phthisis with a vomica communicating with a gaseous tumour on the anterior aspect of the chest 134
- Lister's antiseptic method, empyema treated by (Skerrit) 293
  - —(Bennett) 294
- Loewy, two cases of endocarditis ulcerativa 112
- Löhnlein, the condition of the heart during pregnancy 384
- Lombard, injection of an infusion of digitalis into a vein 249
- Löri, contribution to the physiology of the voice 329
  - remarks on croup and diphtheria 353
- Lucas-Championnière, chronic pseudo-membranous bronchitis 212
- Ludwig, use of neurin in cases of diphtheria 330
- Lugan and Lelu, double cyanide of potassium and zinc 247
- Lung, nervous apparatus of the (Stirling) 262
  - structure of the (Cadiat) 154
  - anomaly of the (Golay) 255
  - morbid histology of human (Ross) 273
  - foreign matters in the (Elam) 268
  - a mutton bone in a bronchus causing gangrene of (Coats) 279
  - cirrhosis of (Ross) 52
  - recovery in a case of embolism affecting the right, and kidney (Cleland) 145
  - excavation of the, in phthisis (Powell) 273
  - gangrene of the 310
  - —(Walker) 314

PAGE

Lung—*continued.*
- hydatid of (Greenfield) 308
- —(Bird) 308
- infiltration of the left superior lobe of the, in consequence of syphilis (Frey) 400
- syphilitic disease of the 275
- syphilitic affections of the (Tiffany) 135

Lung-apex, expansion of the, in pulmonary phthisis (Hænisch) . 109

Lung complications of diphtheria . . 224

Lung disease, see *Phthisis.*

Lungs, pathological relations of the vagus with the (Habershon) . 264
- diffuse caseation of the, subsequent to hæmorrhagic pleural effusion (Foot) 272
- primary cancer of the (McAldowie) 280
- on the cylindroma of the (Heschl) 347
- œdema of the, in Japan 19
- parasites in the, of small-pox patients (Ivanowsky) . . . 111
- syphilitic affection of the (Pentimalli) 76
- of children, chronic catarrhal pneumonia in the apex of the (Fleischmann) 359

Lupus of the larynx, case of (Grossmann) 357

Lürmann, case of formation of an œsophageal fistula with consecutive mediastinal abscesses . . 405

Lurmay, function of the auriculo-ventricular valves 158

Luzinsky, on diphtheria and its treatment 373

Lymphadenitis, acute retro-pharyngeal 366

Lymphatics in the aorta (Stroganoff) 108
- in the human pleura (Bizzozero) . 72
- pulmonary (Grancher) 154

M.

Maas, total extirpation of the larynx 407

McAldowie, primary cancer of the lungs 280

Macdonald, pneumothorax as an early symptom of pulmonary disease . 297

McDowall, rupture of the aorta . . 283

Mackenzie, spasmodic stricture of the œsophagus 289
- —paralysis of the œsophagus . . 289

Macpherson, altitude and disease . . 319

MacSwiney, syphilitic phthisis . . 276

Mader, chronic asthma 360

Madrid, climate of 64

Maget (G.) on the climate of the Japanese Islands 23-24

Magnan, the heart in epilepsy. . . 200

Mahl, case of mediastinal carcinoma. 402

Mahomed, visceral syphilis. . . . 275
- sphygmographic tracings in aneurism 306

PAGE

Marcacci, tracheotomy improvised for the removal of a pin from the larynx 92

Marchionneschi, treatment of diphtheria 94

Marey, electric stimulation of the heart 160

Maroni, pleurisy with fibrinous effusion 81

Marten, two new symptoms of pleuritic adhesions 388

Martino, effects of the galvanic current upon the arterial wall of an aneurism 98

Marty, gonorrhœic endocarditis . . 174

Massari, embolism of the pulmonary artery in consequence of elastic compression of both lower extremities 86

Massei's pathology and therapeutics of the larynx, review by Zannini 103

Mastoid process, on auscultation of the (Michael) 387

Materia medica for diseases of the chest, etc.
- —*in the United Kingdom* . 312-317
- —*in Austria* 371-376
- —*in France* 243-253
- —*in Germany* 408-409
- —*in Italy* 93-97
- —*in Russia* 125-130

Mathieu and Maynan, respiratory capacity of blood in the febrile state 193

Mattei, correlation between the cardiac pulse and the sex of the fœtus 104

Maunder, foreign body in the left bronchus 308

Maximovitsch, nitrite of amyl in carbonic oxide poisoning 126

Maynan and Mathieu, respiratory capacity of blood in the febrile state 193

Mazzoni, arterio-venous aneurism of the left carotid and the jugular vein 84

Mazzotti, pulmonary phthisis, its causes and the importance of hæmoptysis 77

Mediastinal cancer, aphonia from laryngeal paralysis (Yeo) . . . 309
- tumour (Peacock) 308

Mediastino-pericarditis caseosa (Cantilena) 84

Mediastinum, suppurative inflammation of the (Goodhart). . . . 281

Membrane (false) in diphtheria (Sauné) 220

Membranous (pseudo) bronchitis (Lucas-Championnière) . . . 212

Meningitis in diphtheria (Pierret). . 192
- in pneumonia (Reddy). 52

Mercurial treatment of syphilitic laryngitis (Schulgovsky) . . . 125

PAGE
Mercurio, action of quinine in cardiac affections 73
Merlini, treatment of diphtheria 94
Mermagen, contributions to the operation of laryngeal growths 407
Metzquer, inoculability of tubercle 176
Michael, contributions to the physiology and pathology of the voice 382
  on auscultation of the mastoid process 387
Milk (asses') largely used in Madrid 66
Millstone-makers (French) proclivity to phthisis (Peacock) 267
Mitral disease (Fabre) 197
  —(Gowers) 308
  stenosis, aphasia, right hemiplegia in women (Duroziez) 174
Moore, malformation of the heart 270
  thoracic aneurism 282
  aortic disease 283
Mordhurst, a new pneumatometer 386
Morgagni, ventricle of, (Stoerk) 326
Moritz, carbolic acid spray in catarrhal affections of the respiratory organs 127
Morphia, see *Apomorphia.*
  and atropia, antagonism of (Corona) 96
Morphinism, acute (Calvet) 252
  chronic 252
Morton, failure of the heart during inhalation of ether 309
Mosso, action of quinine upon the circulation 73
  effect of compressed air upon the circulation 74
Mount-Dore water (Lassalas) 253
  —(Richelot) 253
Mountain air in cases of phthisis (Yeo) 300
Mouth and larynx, chromic acid in syphilitic affections of the (Pospeloff) 129
Mouth-breathing and its consequences (Cassells) 297
Movements (molar) of the human body produced by the circulation of the blood (Gordon) 260
Moxon, transposition of thoracic and abdominal viscera 261
  clot in the left auricle 281
Mucci, nasal polypus removed by galvano-cautery 93
Mucous membrane, changes in the, covered by ciliated epithelium occurring in catarrhal inflammation (Possadsky) 111
Mueller (Baron von) climate of Australia for consumption 62
Murmurs, anæmic (Peacock) 305
  apex, diagnostic value of (Taylor) 308
  cardiac, modification of (Cuffer) 180
Murrell and Ringer, action of gelseminum sempervirens 313
  inhalations of ipecacuanha wine as

PAGE
Murrell and Ringer—*continued.*
  a spray in winter cough and bronchial asthma 315
Muscles, intercostal (Rutherford) 262
  of the larynx, paralysis of the dilator, after typhus fever (Rehn) 404
  of the ventricular band (Rüdinger) 377
Muscular action of the heart (Chirone) 71
  tissue in the ventricular surface of the tricuspid valve (Zuckerkandl) 325
Mutton bone in a bronchus causing gangrene of lung and simulating phthisis (Coats.) 279
Myocarditis, pregnancy and (Hauber) 383
  chronica following rheumatism (Rühle) 393

N.

Nasal bone, swallowing and impaction in the œsophagus of a necrotic (Langenbeck) 404
  catarrh, contributions to the treatment of (Hartmann) 408
  fossa, congenital osseous occlusion of the right posterior (Zaufal) 358
  polypus removed by galvano-cautery (Mucci) 93
  pharyngo-, cavity, on adenoid vegetations in the (Ganghofner) 358
Naso-pharyngeal cavity, on the utility of the nasal funnel in surgical operations in the (Zaufel) 374
  polypus cured by electrolysis (Viganoni) 97
Navratil, a case of paralysis of the larynx in consequence of trichinosis 383
Neall, snuff for catarrh 286
Neck, on differentiation of the wounds of the (Vogelsang) 396
  contributions to the treatment of deep atheromatous cysts of the (Esmarch) 405
Nedopil, tuberculous ulcer of the tongue 343
  on psoriasis of the tongue and the mucous membrane of the mouth, and its relation to carcinoma 338
Nerve, pneumogastric (Habershon) 263
  —and its relation to pneumonia (Steiner) 378
  see *Vagus.*
Nerves, effects on the heart, respiration and circulation, of the stimulation of sensitive (Franck) 158
  experiments on the, supposed to be inhibitory (Onimus) 161
Nervous aphonia (Jaccoud) 217
  apparatus of the lung (Stirling) 262
  asthma, treatment of, by galvanism 115
  hæmoptysis (Carre) 208

PAGE

Nervus laryngeus recurrens, paralysis of (Donati) 89
Neureutter and Salmon, reports from the Franz-Josef Hospital for Children 345
Neurin, use of, in cases of diphtheria (Ludwig) 330
New-born child, a means of ascertaining that a, has not breathed (Gellé) 242
Nicholson (Brinsley) use of cochineal in hooping-cough 315
Nicotine, action of, on the heart (Peyrani) 72
Nikoladoni, formation of a diverticulum of the œsophagus, performance of œsophagotomy . . . 366
Nitrite of amyl, action of (Brunton) . 314
  use of, in carbonic oxide poisoning (Maximovitsch) 126
  inhalation of (Jolyet and Regnard) 243
Nitrogen, absorption of free, by vegetables under the influence of atmospheric electricity (Berthelot) 173
  in the urine, on the influence of the impeded interchange of the pulmonary gases upon the quantity of (Eichhorst) 402
Nivet, etiology of bronchocele in the Puy de Dôme 179
Nixon, paracentesis pericardii . . . 304
Norbury, acute tonsillitis dependent on atmospheric fungi 266
Nose, removal of foreign bodies from the (Apolant) 403
  see *Nasal*.

O.

Oatmeal, as a sustainer of the body under physical exertion . . . 317
Œdema of the lungs in Japan. . . 19
Oertel's treatment of diphtheria . . 372
Œsophageal fistula, case of (Coghill) 296
  case of formation of an (Lürmann) 405
Œsophagotomy, performance of (Nikoladoni) 366
Œsophagus, muscular movements of the, regulated by the pneumogastric (Habershon) 263
  spasmodic stricture of the (Mackenzie) 289
  formation of a diverticulum of the 366
  case of uniform dilatation of the (Stern) 392
  paralysis of the (Mackenzie) . . 289
  diphtheritic ulcer of the 345
  swallowing and impaction in the, of a necrotic nasal bone (Langenbeck) 404
  extraction of a large pocket-knife

PAGE

Œsophagus—*continued*.
  out of the, by œsophagotomy (Gussenbauer) 370
Omboni, aneurism of the thoracic aorta treated with electro-puncture 98
Onimus, experiments on the nerves supposed to be inhibitory . . . 161
Opium, the best remedy in acute miliary tuberculosis (Hayden) . 315
Oral cavity, on the rare forms of disease of the mucous membrane of the tongue and the (Schwimmer) 344
Organs of voice, contributions to the anatomy and physiology of the (Stoerk) 326
Ormerod and Legg, aneurism of the heart 271
Orton, rupture of the aortic valve . 307
OSLER (W.), *Report on Canada* . 51-55
  respiratory system in hæmorrhagic small-pox 53
  fatty degeneration of the heart in pernicious anæmia 54
  cases of aneurism of the aorta . . 54
  small aneurisms of branches of pulmonary artery 54
Ott, on graphic demonstration of the heart's movements . . . 332, 342
  on laryngeal tuberculosis . . . 357
  on anæsthesia of the larynx . . . 358
Otto, treatment of hooping-cough . 126
Overwork, effect of, on the head and aorta (Barr) 266
Oxygen, comparative experiments with the respiration of, and that of air 74
Ozœna, case of tracheal (Baginski) . 397
Ozone, action of, upon animals (Tschemesoff) 107

P.

Pacini, artificial respiration . . . 104
Paladino, examination of human and other animal hearts. 70
Paracentesis, operation of, in cases of empyema 293
  of chest and abdomen (Pepper) . 137
  of the pericardium (Roberts) . . 140
  —forty-one cases of . . . 141-143
  —(Nixon) 304
  —(Hunt) 305
  thoracis, see *Thoracentesis*.
Paralysis, a case of diphtheria with concurrent (Tymaczkowski) . . 351
  laryngeal (Poyer) 218
  —case of, in consequence of trichinosis (Navratil) 383
  —aphonia from (Yeo) 309
  — bilateral paralysis of the recur-

PAGE
Paralysis—*continued*.
    rent laryngeal, caused by aneurism of the ascending aorta and arch of the aorta (Klein) . . . 344
Parasites in the lungs of small-pox patients (Ivanowsky) 111
Parasitic disease of the heart in Japan 17
Parotitis, case of suppurative, as a result of occlusion of Steno's duct (Senator) 395
Parrot, tubercular adenopathy . . . 191
Pathogenesis of hooping-cough (Tschamer) 338
Pathological demonstrations (Buhl) . 395
Pathological Society, discussion on visceral syphilis 274
Pathology of the thoracic organs, etc.—
    —*in the United Kingdom* . 269-285
    —*in Austria* 342-350
    —*in France* 186-193
    —*in Germany* 390-395
    —*in Italy* 77-80
    —*in Russia* 110-114
Pavesi, treatment of diphtheria . . 94
Peacock, French millstone-makers, proclivity to phthisis 267
    case of empyema 295
    anæmic murmurs 305
    mediastinal tumour 308
Pearse, death rate from consumption in Devonshire 323
Pentimalli, syphilitic affection of the lungs 76
Pepper, aspiration in the treatment of pleural effusion 135
    syphilitic disease of pericardium, pleura and peritoneum 137
Percussion, on the perception of feeling during (Hein) 339
Pericarditis, cases of (Sibson) 303
    pain in (Wertheimer) 183
    rare in Japan 14
    mediastino-, caseosa (Cantilena) . 84
Pericardium, adherent (Archer) . . . 280
    on a case of the adhesion of the heart with the (Weiss) 361
    hæmorrhage into the (Jackson) . 283
    hydrops pericardii in Japan . . . 15
    pleura and peritoneum, syphilitic disease of (Pepper) 137
    paracentesis of the (Roberts) . . 140
    —41 cases of 141-143
    —(Nixon) 304
    —(Hunt) 305
Pericardium (pyo-) recovery from (Gould) 281
Peritoneal effusion, case of, situated above the liver, and penetrating into the right lung (Pfuhl) . . . 401
Peritoneum, syphilitic disease of pericardium pleura and (Pepper) . 137
Peritonitis, tubercular, cases of (Anderson) 301

PAGE
Peritonitis—*continued*.
    in a child suffering from a cardiac disease and epileptiform attacks 346
Pertussis, Æthiops mineralis in (Chiricozzi) 95
    fungus (Samer) 110
    see *Hooping-cough*.
Petit, hepatic affections and pleurisy 178
Petrina, on the paradox pulse in cases of stenosis of the large air passages 363
Peyneau, theory of respiration . . . 165
Peyrani, action of some alkaloids upon the heart 72
Peyrot, intrathoracic tension 236
Pfuhl, case of peritoneal effusion, situated above the liver, and penetrating into the right lung, with the symptoms of a pyopneumothorax of the right side 401
Pharyngeal catarrh, contributions to the treatment of (Riesenfeld) . . 409
    cough, contribution on (Spamer) . 382
Pharyngitis and gastritis crouposa . 345
Pharyngo-nasal cavity, on adenoid vegetations in the (Ganghofner) 358
    —(Justi) 406
Pharyngotome devised by Stoerk . 366
Pharynx, on miliary tuberculosis of the (Fränkel) 391
    treatment of diphtheria of the (Weckerling) 408
    —(Wertheimer) 408
Phonation a means of developing the lungs 100
Phonophobia, on (Coen) 356
Photiades, on stricture of the larynx by membranous cicatrices, and direct adhesions of its walls . . 404
Phtheiriasis frequent in Japan . . . 10
Phthisis, geographical distribution of, in England and Wales (Haviland) 320
    in Algeria (Feuillet) 253
    prevalence of, in Japan 20
    common in Madrid 66
    statistics of, in Victoria (Thomson) 56
    comparative statistics of, in Victoria and England (Singleton) . . . 57
    costal cartilages in (Thompson) . 273
    excavation of the lung in (Powell) 273
    among the granite masons of Aberdeen (Beveridge) 268
    French millstone-makers proclivity to (Peacock) 267
    industrial 268
    absence of, in the ape (Bochefontaine) 255
    prognosis in (Wilks) 302
    treatment of 298
    —(Yeo) 299
    —(Thorowgood) 300
    —(Grellet) 301
    case of, with a vomica communicating with a gaseous tumour on

PAGE

Phthisis—*continued.*
  the anterior aspect of the chest (Lippencott) 134
  influence of hæmoptysis in the development of (Annelli) . . . 81
  cancerous sarcocele and (Picard) 178
  Is, developed by the ingestion of tubercular matter? (Metzquer) 176
  a mutton-bone in a bronchus causing gangrene of lung and simulating (Coats) 279
  fenestrated pulmonary valve leaflets and peculiar growth of the tricuspid valve leaflets from a case of (Starr) 144
  curability of acute (Anderson) . . 301
  belladonna in (Fothergill) . . . 313
  hypodermic injections of carbolic acid for the cure of (Schnitzler). 371
  sylphium cyrenaicum in (Lombardo) 95
  pulmonary, case of 395
  —its causes (Mazzotti) 77
  —on the development of and its treatment 336
  —cardio-systolic sounds of cavities 399
  —expansion of the lung-apex in (Hænisch) 109
  —on the relation of hæmoptysis to (Heitler) 336
  —on the development of, and its treatment by means of the pneumatic method (Szohner) . . . 336
  —symptoms of incipient (Heitler) 340
  —cure of chronic (Steinbrück) . 409
  —anhidrotics in (Hayden) . . . 315
  —hydro-therapeutics in (Sokolowsky) 129
  —administration of atropia in the treatment of 133
  syphilitic (Robinson) 275
  —(MacSwiney) 276
Phthisical temperament (Wilks) . . 262
Physiology of the thoracic organs, etc.—
  in the United Kingdom . . 256-266
  in Austria 324-339
  in France 158-174
  in Germany 377-383
  in Italy 70-75
  in Russia 105-109
Picard, cancerous sarcocele and phthisis 178
Pick, two cases of spasm of the glottis 409
Pierret, meningitis in diphtheria . 192
Piperine, action of, on the heart (Peyrani) 73
Pircher, expiration out of the pneumatic chamber into the free atmosphere or rarefied air, and the treatment of pulmonary emphysema 375

Plessimetrical auscultation (Guénea
  de Mussy) . . . .
Plethora, on universal (Kœster) .
Pleura, lymphatics of the huma
  (Bizzozero) . . . .
  pus removed from left, by mean
    of a trochar (Franklyn) . .
  primary cancer of the (Campbell
  and peritoneum, syphilitic diseas
    of pericardium (Pepper) . .
Pleural cavity, case of effusion int
  the left (Broadbent) . . . .
  —method for determining the nature of the gas contained in the
    in pneumothorax . . . . .
  —drainage of the, in a chil
    (Winiwarter). . . . . . .
  effusion . . . .
  —hæmorrhagic, diffuse caseatio
    of the lungs subsequent to (Foot
  —aspiration in the treatment o
    (Pepper) . . . .
Pleural, sub-ecchymoses (Girard) .
Pleurisy (Lasègue) . . . .
  case of . . . .
  common in Japan . . . . . .
  on the treatment of (Heitler) . .
  latent (Fea) . . . .
  with fibrinous effusion (Maroni) .
  hepatic affections and (Petit) . .
Pleuritic adhesions, two new symptoms of (Marten) . . . . . .
  effusions, operation of thoracentesis
    for (Walter) . . . .
  —aspiration in (Foster) . . . .
  — —(Clark) . . . .
  —transmission of soundless voice
    through . . . .
  —treated by compression of the
    healthy side of the thorax (Sante
    Albertazzi) . . . .
Pleuro-pneumonia, case of, (Wharry)
  followed by empyema treated by
    paracentesis (Ticehurst) . . .
Pneumatic chamber, expiration out
  of the, into the free atmosphere
  (Pircher) . . . .
  method, contributions to the (Biedert) . . . .
  —of treatment for pulmonary
    phthisis (Szohner) . . . . .
Pneumato-therapeutics (Austria) 371
Pneumatometer, a new, (Mordhurst)
Pneumatometry, value of . . . .
Pneumogastric nerve (Habershon) .
  on its relation to pneumonia
    (Steiner) . . . .
  stimulation, sudden death from
    (Charcot) . . . .
Pneumonia, case of . . . .
  four cases of (Ghinozzi) . . . .
  statistics of, in British Kaffraria 4
  common in Japan . . . .
  on the pneumogastric nerve and its
    relation to (Steiner) . . . .

PAGE

- Pneumonia—*continued.*
  - pathology and treatment of 288
  - an intermitting (Hildebrandt) 401
  - on migratory (Kelemen) 359
  - on transitory (Leube) 399
  - secretion of uric acid and the deposit of sediments in croup and (Scheube) 403
  - antipyretic treatment of (James) 135
  - and diabetes (Lécorché) 210
  - with meningitis, case of (Reddy) 52
  - acute, of infants (Steinitz) 401
  - caseous, and aortic aneurism (Haust) 174
  - —contributions to the histology of (Levy) 397
  - chronic catarrhal, in the apex of the lungs of children (Fleischmann) 359
  - tuberculous, in the 22nd Infantry Regiment (Eckert) 337
- Pneumonic fever (Bernheim) 209
- Pneumonomycosis (Buhl) 395
- Pneumothorax (Bernheim) 213
  - case of (Church) 297
  - as an early symptom of pulmonary disease (Macdonald) 297
  - analysis of a gas in (Kretschy) 348
  - easy method for determining the nature of the gas contained in the pleural cavity in (Ewald) 389
  - pyo-, of the right side (Pfuhl) 401
  - —lateris sinistri (Ritter) 347
- Polansky, local treatment of emphysema 376
- Politzer, treatment of diphtheria 373
- Pollock (J. E.), chronic forms of lung disease 302
- Polypus, nasal, removed by galvano-cautery (Mucci) 93
  - naso-pharyngeal, cured by electrolysis (Viganoni) 97
- Polypi, laryngeal, new and simple method of operation on (Voltolini) 407
- Porter, fatal embolism and thrombosis of the pulmonary arteries 140
  - treatment of pertussis 149
- Position of the body, on the influence of the, upon the results of examinations of the chest (Rollet) 340
- Pospeloff, chromic acid in syphilitic affections of the mouth and larynx 129
- Possadsky, changes in the mucous membrane covered by ciliated epithelium occurring in catarrhal inflammation 111
- Potash, chlorate of, in saturated solution, a specific in diphtheria 408
  - —in the treatment of diphtheria (Cook) 51
- Potassium, cyanide of 247
  - bromide of, in heart affections (Angrisani) 96

PAGE

- Pottery, diseases incident to the manufacture of (Arlidge) 268
- "Pouce"—disease caused by the inhalation of flax dust (Purdon) 268
- Powell, excavation of the lung in phthisis 273
- Poyer, laryngeal paralysis 218
- Pregnancy and myocarditis (Hauber) 383
  - condition of the heart during (Löhnlein) 384
- Pressure, on changes of, in the radial artery (Riegel) 379
- Preuscher, on the causes of the first respiratory movements 379
- Priestley, physiological action of vanadium 313
- Prostitution in Japan 13
- Psoriasis of the tongue and the mucous membrane of the mouth, and its relation to carcinoma (Nedopil) 338
- Pulmonary abscesses (Leyden) 394
  - artery, aneurism of, (Finlayson) 282
  - —(Franks) 283
  - —small aneurisms of branches of, (Osler) 54
  - —fat-embolism of the, after a gun-shot wound (Boettcher) 123
  - —case of congenital stenosis of the (Weiss) 398
  - —thrombosis of the left 346
  - arteries, fatal embolism and thrombosis of the (Porter) 140
  - —embolism of fat in the (Heschl) 347
  - capillaries, dilatation of the (Berkart) 279
  - cavity, observation of the motion of a vessel in a (Brunn) 399
  - congestion in rheumatic fever (Bernheim) 204
  - disease, pneumothorax as an early symptom of (Macdonald) 297
  - diseases, on the action of artificially rarefied air in (Trentler) 409
  - —observations on (Gerhardt) 399
  - embolism (Lancereaux) 205
  - epithelium, researches on (Kuttner) 378
  - gangrene, on the progress of, and on the influence of different remedies (Filehne) 400
  - gases, on the influence of the impeded interchange of the, upon the quantity of nitrogen in the urine (Eichhorst) 402
  - gymnastics (Franchi) 101
  - hæmorrhage (Cullingworth) 276
  - lymphatics (Grancher) 154
  - sarcoma, case of (Hampeln) 122
  - valve leaflets, fenestrated (Starr) 144
  - valves, anomalous arrangement of, and fenestration of pulmonary leaflets (Wilson) 144
- Pulsation, arterial, intermission of (Franck) 183
- Pulse, on the influence of condensed

PAGE

Pulse—*continued.*
  and rarefied air upon the, (Riegel and Frank) 380
  respiratory changes of the, and pulsus paradoxus (Riegel) . . 380
  double venous (Bozzolo) . . . 86
  in fœtus, on the frequency of the (Engelhorn) 379
  cardiac, correlation between the, and the sex of the fœtus (Mattei) 104
  carotid (Tripier) 182
  on the paradox, in cases of stenosis of the large air-passages (Petrina) 363
  slow (Handfield Jones) 259
  —(Bradbury) 259
  —of jaundice (Foster) 259
  —in cardiac disease (Russell) . . 259
Puna, mal de 320
Purdon, injurious effects on the lungs from the inhalation of flax-dust . 268
Pye-Smith, visceral syphilis . . . 275
  case of suppuration in the brain and spinal cord following the cure of empyema 295
Pyo-pericardium, recovery from (Gould) 281
Pyo-pneumothorax lateris sinistri (Ritter) 347
  of the right side (Pfuhl) 401
Pyo-thorax cured by thoracentesis (Serra) 82

Q.

Quinine, action of, upon the circulation (Mosso) 73
  in cardiac affections (Mercurio) . 73
Quinsy (Atkinson) 289

R.

Rabuteau, ethylic bromide 251
Rachitis (Jenner) 302
Rainfall in Yedo and Yokohama (Hepburn) 3
Ranvier, structure of the veins . . 154
Reddy, case of pneumonia with meningitis 52
Regnard, extra-cardiac blowing sounds 180
  —and Jolyet, inhalation of amylic nitrite, and its effects upon the respiratory products and upon the blood 243
Regurgitant disease, on the intervention of stenosis in (Fabre) . 196
Rehn, paralysis of the dilator muscles of the larynx after typhus fever 404
Renal asthma (Johnson) 285
"Resonator," new instrument called a (Holden) 136
Respiration, theory of (Peyneau) . . 165
  of the fœtus (Zweifel) 379

PAGE

Respiration—*continued.*
  of oxygen, comparative experiments with the, and that of air . 74
  artificial (Pacini) 104
  case of Cheyne-Stokes's (Ross) . 53
  —(Biot) 201
  —(Bradbury) 259
  —(Broadbent) 291
  —(Wharry) 292
  —(Treves) 292
  —accompanying aortic aneurism (Sacchi) 86
  "cornage," or roaring (Follin and Duplay) 184
Respirator inhaler (Roberts) . . . 312
  veil (Lennox Browne) 312
Respirators, utility of 310
Respiratory capacity of blood in the febrile state (Mathieu and Maynan) 193
  changes of the pulse (Riegel) . . 380
  gymnastics (Franchi) 99
  movements, on the causes of the first (Preuscher) 379
  organs, carbolic acid spray in catarrhal affections of the (Moritz) 127
  —diseases of, in Victoria . . . 60
  —diseases of, in Japan . . . 17-23
  passages, statistics of diseases of the, in British Kaffraria . . . 46
  products, inhalation of amylic nitrite, and its effect upon the (Jolyet and Regnard) 243
  sounds (Boudet and Chauveau) . . 163
  system in hæmorrhagic small-pox (Osler) 53
Retropharyngeal abscesses in children (Bokai) 364
Retropharyngealis lymphadenitis (Bokai) 364
Rheumatic fever, pulmonary congestion in (Bernheim) 204
  complications of (Champneys) . . 310
Rib, movability of the first (Amburger) 110
  exostosis upon the first (Hulke) . 262
Ribs, contributions to the resection of, in cases of empyema (Stehberger) 407
Richelot, Mount-Dore treatment . . 253
Riegel, on changes of pressure in the radial artery 379
  on respiratory changes of the pulse and pulsus paradoxus 380
  endocarditis ulcerosa 392
  —and Frank, on the influence of condensed and rarefied air upon the pulse 380
Riesenfeld, contributions to the treatment of chronic pharyngeal catarrh 409
Rigal, asystole 198
Ringer and Murrell, action of gelseminum sempervirens 313

PAGE

- Ringer and Murrell—*continued.*
  - inhalations of ipecacuanha wine as a spray in winter cough and bronchial asthma 315
- Ritter, case of a hiatus lateris sinistri thoracis congenitus 342
  - pyo-pneumothorax lateris sinistri . 347
  - —and Feltz, action of digitalis compared with that of the biliary salts, on the pulse, arterial tension, respiration and temperature 247
- Roberts (J. B.), acute bronchocele with cardiac hypertrophy occurring during pregnancy and producing fatal dyspnœa 138
  - paracentesis of the pericardium . 140
- Roberts (W.), respirator-inhaler . . 312
- Robin and Cadiat, structure of the endocardium 151
- Robinson, syphilitic phthisis . . . 275
- Roddick, aneurism of the aorta . . 54
- Rollet, on the influence of the position of the body upon the results of examinations of the chest . . 340
- Rosenbach, contribution to the doctrine of percussion sound of the thorax 386
- Ross, case of cirrhosis of the lung . 52
  - two cases of tuberculosis 52
  - case of Cheyne-Stokes's respiration 53
- Ross (J.), morbid histology of human lung 273
- Rüdinger, contributions to the anatomy of the larynx 377
- Rühle, cherry-like tumour in the heart of a woman 393
  - myocarditis chronica following rheumatism 393
- Russell, slow pulse in cardiac disease 259
  - Graves's disease 290
- Russia, *Report by* A. Wahltuch 105-132
  - —*anatomy and physiology* . . 105-109
  - —*diagnosis* 109-110
  - —*pathology* 110-114
  - —*clinical medicine and surgery* 114-125
  - —*materia medica and therapeutics* 125-130
  - —*hygiene* 131-132
- Ruthenberg, staphylorraphy and production of a clear voice by advancement of the posterior pharyngeal wall 403
- Rutherford, intercostal muscles . . 262
- Ryan, cases of croup 287

S.

- Sacchi, aortic aneurism accompanied by symptoms of Cheyne-Stokes's respiration 86
- Sacrum, caries of the 346
- Saké, a spirit distilled from rice . . 11
- Salicylic acid, on the therapeutic effect of (Torday) 372
- Salmon and Neureutter, Reports from the Franz-Josef Hospital for Children 345
- Salvioli, endothelial cells 80
- Samer, fungus pertussis 110
- Sansom, croup and diphtheria . . . 277
- Sante Albertazzi, pleuritic effusion treated successfully by compression of the healthy side of the thorax 82
- Sarcocele, cancerous, and phthisis . 178
- Sarcoma pulmonum (Hampeln) . . 122
- Saundby, hypertrophy of the vascular system 284
- Sauné, treatise on diphtheria . 220-234
- Savart and Chauveau, experiments on theory of respiration . . . 165
- Sawarowsky, treatment of hooping-cough 126
- Schäffer, compensation of the true vocal cord by the ventricular band 397
  - case of laceration of a vocal cord . 397
- Scheff, contribution to the doctrine of fractures of laryngeal cartilages. 356
- Scheube, secretion of uric acid and the deposit of sediments in croup and pneumonia 403
- Schiltoff (A.), external and internal examination of the larynx . . 109
- Schnitzler, contributions to the diagnosis and therapeutics of the laryngo- and tracheo-stenoses . 367
  - hypodermic injections of carbolic acid for cure of phthisis . . . 371
  - treatment of diphtheria 372
- Schönbrod, five cases of thoracentesis 405
- School-life, influence of, upon the development of the chest (Lessgaft) 131
- School-rooms, amount of air in . . 131
- Schulgovsky, mercurial treatment of syphilitic laryngitis 125
- Schüller, on the relation of tracheotomy to croup. 404
- Schwimmer, on the rare forms of disease of the mucous membrane of the tongue and the oral cavity 344
- Sclerema attended by cardiac disturbance (Harley) 284
- Sea-life, pathology of (Faber) . . . 322
- Sea-sickness in consumption (Faber) 302
- Sea voyages, influence of (Faber) . 322
  - for chest disease (Shingleton Smith) 322
- Sée, on "cornage" in human subject 184
- Seeligmüller, chlorate of potash in saturated solution a specific in diphtheria 408
- Semiotics—
  - —*in France* 180-186

PAGE

Senator's treatment of diphtheria. . 372
  case of suppurative parotitis as a result of occlusion of Steno's duct 395
Septum ventriculorum, apertures in the (Duckworth) 256
Serra, case of pyothorax 82
Sex of the fœtus, correlation between the cardiac pulse and the . . . 104
  as a cause of disease (Hicks) . . 266
Sibson, site of the tricuspid valve . 257
  arterial tension 260
  cases of pericarditis 303
Sidlo, on a case of bronchial croup, and a few remarks on laryngospasm and its treatment . . . 353
  on parenchymatous inflammation of the tongue 364
Silver, its effects and use in nervous asthma (Curci) 96
Singleton, comparative statistics of phthisis in Victoria and England 57
Skerritt, empyema treated by Lister's antiseptic method 293
Sleep, causes of (Brunton) . . . 265
Small-pox patients, parasites in the lungs of (Ivanowsky). . . . 111
  hæmorrhagic, respiratory system in (Osler) 53
Smith (Patrick), Victoria as a residence for consumptives . . . 63
SMITH (R. SHINGLETON), *Report on the United Kingdom* . . 256-323
  sea voyages for chest disease . . 322
Smith (Walter), intra-thoracic tumour 280
Sneezing, fits of, during pregnancy (Barnes) 286
Snow-fall in Japan 3
Sokolowsky, hydro-therapeutics in pulmonary phthisis. 129
Sommerbrodt, a large fibroma of the larynx, a cause of epilepsy . . 383
Sound, on double, and double noise on the crural artery (Bamberger) 339
  percussion, of the thorax, contributions to the doctrine of (Rosenbach) 386
  —(Hobein) 387
  of the heart, reduplication of the first (Johnson) 258
Soundless voice, transmission of, through pleuritic effusions 75
Sounds, respiratory (Boudet and Chauveau) 163
  extra cardiac blowing (Regnard) . 180
  cardio-pneumatic, contributions to the differentiation of the (Kahler) 362
  sounds, cardio-systolic, of cavities in pulmonary phthisis (Gerhardt). 399
  of the heart, mechanism of the (Williams) 258
Southey, drainage tubes for anasarca 310
Spain, *Report by* W. JELLY . . 64-69
Spamer, contribution on pharyngeal cough 382

PAGE

Spasmodic inspiration, case of (Bistroff) 114
Sphygmographic tracings in aneurism (Mahomed) 306
Staphylorraphy and production of a clear voice by advancement of the posterior pharyngeal wall (Ruthenberg) 403
Starr, fenestrated pulmonary valve leaflets, and peculiar growth in arc of the tricuspid valve leaflets from a case of phthisis . . . 144
Stehberger, contribution to the resection of ribs in cases of empyema 407
Steinbrück, cure of chronic pulmonary phthisis 409
Steiner, on the pneumogastric nerve and its relation to pneumonia . 378
Steinitz, the acute pneumonia of infants 401
Steno's duct, case of suppurative parotitis as a result of occlusion of (Senator) 395
Stenoses (laryngo- and tracheo-), contributions to the diagnosis and therapeutics of (Schnitzler) . . 367
Stenosis, on the intervention of, in regurgitant disease (Fabre) . . . 196
  of the large air passages, on the paradox pulse in cases of (Petrina) 363
  of the pulmonary artery (Galton) 285
  —case of congenital (Weiss) . . 398
  ostii venosi dextri (Grigensohn) . 120
  tricuspid (Gould) 306
  laryngo-, catheterism and mechanical dilatation in (Labus) 91
  —case of (Donati) 89
  mitral, aphasia, right hemiplegia in women (Duroziez) 174
Stern, case of uniform dilatation of the œsophagus 392
Stethoscope of Voltolini (Baas) . . 384
Stevenson, endoarteritis chronica deformans and its relation to rupture of the heart 285
Stewart, differential diagnosis of croup and diphtheria 148
Stiller, on aneurism of the abdominal aorta 361
Stimulation, sudden death from pneumogastric (Charcot) 179
Stirling, nervous apparatus of the lung 262
Stocker, pain in the chest of obscure origin 310
Stoerk, contributions to the anatomy and physiology of the organs of voice and language 326
  on cough 328
  pharyngotome devised by 366
Stokes, see *Cheyne-Stokes.*
Stomach, effect of irritation of the pneumogastric on the (Habershon) 264

PAGE
Stomatitis in China 37
Stroganoff, oxidation in asphyxiated blood 108
  lymphatics in the aorta 108
  cellular elements in the internal coat of an inflamed artery . . 110
Stroganow, origin of cells in endarteritis 175
Strohmayer, treatment of diphtheria with ice 373
Styrap, a cold and its cure 285
Subpleural ecchymoses (Girard) . . 242
Surgery of the thoracic organs, etc. –
  in Austria 370-371
  in France 234-239
  in Germany 403-408
  in Italy 80-93
  in Russia 114-125
Sylphium cyrenaicum in phthisis (Lombardo) 95
Syphilis, infiltration of the left superior lobe of the lung in consequence of (Frey) 400
  visceral, discussion on, at the Pathological Society 274
Syphilitic affection of the lungs (Pentimalli) 76
  affections of the lung (Tiffany) . 135
  —in Japan 14
  —of the mouth and larynx, chromic acid in (Pospeloff) . . . 129
  disease of the lung 275
  —of pericardium, pleura, and peritoneum (Pepper) 137
  laryngitis, mercurial treatment of (Schulgovsky) 125
  —tracheotomy in a case of (Thornton) 288
  phthisis (Robinson) 275
  —(MacSwiney) 276
  —in Japan 23
Systole, mechanism of the cardiac (Laborde) 158
  see *Asystole*.
Szohner, on the development of pulmonary phthisis and its treatment by means of the pneumatic method. 336

T.

Tabes mesenterica, mortality from, in Victoria and England . . . 58
Tamburini, rupture of a fatty heart after a blow 102
Taylor (F.), diagnostic value of apex-murmurs 308
Therapeutics of the thoracic organs, etc.,—
  —*in the United Kingdom* . 312-317
  —*in Austria* 371-376
  —*in France* 243-253
  —*in Germany* 408-409
  —*in Italy* 93-97
  —*in Russia* 125-130

PAGE
Thompson, costal cartilages in phthisis 273
  clot in the left ventricle . . . 281
Thomson (W.), statistics of phthisis in Victoria 56
Thoracentesis, case of (Serra) . . 82
  cases of (Bowditch) 296
  three cases of (Faludi) 369
  five cases of (Schönbrod) . . . 405
  sudden death after (Walter) . . 125
  with favourable result (Hoisel) . 368
  and drainage of the pleural cavity in a child (Winiwarter) . . . 368
Thoracic aneurism (Dolan) . . . 281
  —case of (Johnson) 307
  intra-, aneurism (Wilks). . . . 306
  aorta, aneurism of the, treated with electro-puncture (Omboni) . . 98
  tumour (Finny) 280
Thorax, contribution to the doctrine of percussion sound of the (Rosenbach) 386
  case of a hiatus lateris sinistri thoracis congenitus (Eppinger) . 342
  pleuritic effusion treated by compression of the healthy side of the (Sante Albertazzi) . . . 82
  stab in the (Cutler) 150
  pistol-ball wound of the (Collins) 149
  see *Hæmothorax*, *Intrathoracic*, *Pneumothorax*.
  pyo-, cured by thoracentesis (Serra) 82
Thornton, tracheotomy performed four times within a few years upon the same patient . . . 288
Thorowgood, treatment of phthisis . 300
Throat-affections, electro-therapeutics in (Jamschtschenko) 129
Thrombosis, cardiac (Balfour) . . 281
  of the pulmonary arteries (Porter) 140
  arteriæ pulmonalis sinistræ . . . 346
Thrombus, obliteration of the vena cava ascendens by a (Kahler) . 350
Thymus gland, case of enlarged (Brigidi) 80
Ticehurst, treatment of empyema by paracentesis 293
TIDY, C. M., *Report on the United States of America* . . . 133-150
Tiffany, syphilitic affections of the lung 135
Timbrometer (Forjett) 261
Tobacco smoked by both sexes in Japan 12
Tongue, ulcer of the frenum linguæ in hooping cough (Cutler) . . 149
  tuberculous ulcer of the (Nedopil) 343
  —(Körte) 390
  special form of tuberculous disease of the (Kuessner) 390
  on the rare forms of disease of the mucous membrane of the (Schwimmer) 344
  on psoriasis of the (Nedopil) . . 338
  on parenchymatous inflammation of the (Sidlo) 364

PAGE
Tongue—*continued.*
  amputation of the, on account of a large tuberculous tumor, which was considered a carcinoma (Albert) 370
  and larynx, amyloid tumors at the (Ziegler) 390
Tonsillitis, acute, dependent on atmospheric fungi (Norbury) . . . 266
Torday, on the therapeutic effect of salicylic acid 372
Tourneux and Hermann on some flat epithelia in the animal kingdom 137
Trabecular tissue of the heart (Zuckerkandl) 324
Trachea, passage of a canula into the (Kirchhoff) 396
Tracheal ozœna, case of (Baginski) 397
Tracheotom, new laryngo- (Gregorelli) 92
Tracheotomy (Cameron) 291
  cases of (Atherton) 51
  case of (Donati) 89
  in Japan 18
  improvised for the removal of a pin from the larynx (Marcacci) . . 92
  performed four times within a few years upon the same patient (Thornton) 288
  sudden death of a child after a successful (Holländer) 396
  on the relation of, to croup (Schüller) 404
  in cases of croup 310
  in cases of diphtheria and croup . 287
  flexible, tubes (Baker) 288
Trades, effects of, on the workmen 267
Trentler, on the action of artificially rarefied air in pulmonary disease 409
Treves, cases of Cheyne-Stokes's respiration 292
Trichinosis, case of paralysis of the larynx in consequence of (Navratil) 383
Tricuspid valve, site of the (Sibson) 257
  on the muscular tissue in the ventricular surface of the (Zuckerkandl) 325
  leaflets, peculiar growth of the (Starr) 144
Tripier, experiments on the vagi . . 167
  on the carotid pulse 182
  etherisation in young children . 250
Tschamer, pathogenesis of hooping-cough 338
Tschemesoff, action of ozone upon animals 107
Tschiriew, effects of blood-pressure on the rhythm of the heart . . 106
Tubercle, histology of 269
  not to be ranged under the head of tumors (Lancereaux) 188
  inoculabilility of (Metzquer) . . 176
  and diabetes (Lécorché) 211
  labial (Ledenta) 192
Tubercular adenopathy (Parrot) . . 191

PAGE
Tubercular—*continued.*
  granulation (Grancher) 190
  peritonitis, cases of (Anderson) . 301
  ulcer (Laveran) 192
Tuberculosis, researches on (Foa) . 77
  two cases of 52
  distinguished from pulmonary phthisis (Brugelman) 128
  on inflammatory changes of the viscera, due to caseous foci, produced in animals experimented on, in reference to the question of (Wolff) 394
  acute, in a child (Barlow) . . . 272
  acute miliary, opium in (Hayden). 315
  laryngeal (Ott) 357
  miliary, of the pharynx (Fränkel) 391
Tuberculous disease of the tongue, special form of (Kuessner) . . 390
  pneumonia in the 22nd Infantry Regiment (Eckert) 337
  tumour, amputation of the tongue on account of a large (Albert) 370
  ulcer of the tongue (Nedopil) . . 343
  —(Körte) 390
Tumour, cherry-like, in the heart of a woman (Rühle) 393
  gaseous, on the anterior aspect of the chest (Lippencott) 134
  intrathoracic (Finny) 279
  —(Bramwell) 280
  —(Smith) 280
  mediastinal (Peacock) 308
  thoracic (Finny) 280
Tumours (amyloid) at the tongue and larynx (Ziegler) 390
Tymaczkowski, a case of diphtheria with concurrent diphtheria . . 351
Tympanic cavity, anomalies of the taste, of sensations of feeling, and of salivation in consequence of diseases of the (Urbantschitsch) 333
Typhoons in Japan 24
Typhoid fever, case of, in China . . 25
Typhus fever, bronchial croup during (Eisenlohr) 396
  paralysis of the dilator muscles of the larynx after (Rehn) . . . 404

U.

Ulcer, diphtheritic, of the œsophagus 345
  tubercular (Laveran) 192
  tuberculous, of the tongue (Nedopil) 343
  —(Körte) 390
United Kingdom of Great Britain and Ireland, *Report by* R. SHINGLETON SMITH *and* R. WHARRY. 256-323
  —*anatomy and physiology* . . 256-266
  —*etiology* 266-269
  —*pathology, morbid anatomy and histology* 269-285
  —*clinical medicine* 285-312

PAGE
United Kingdom—*continued.*
  —*materia medica and therapeutics* 312-317
  —*climatology* 317-323
United States of America, *Report by* C. M. Tidy 133-150
Unterholzer, treatment of diphtheria 373
Urbantschitsch, observations on anomalies of the taste, of sensations of feeling, and of salivation in consequence of diseases of the tympanic cavity 333
Uric acid, secretion of, and the deposit of sediments in croup and pneumonia (Scheube) 403
Urine, on the influence of the impeded interchange of the pulmonary gases upon the quantity of nitrogen in the (Eichhorst) . 402

V.

Vacher, on the serum of blood as a therapeutic agent 312
Vagi, experiments on the (Tripier) . 167
Vagus, influence of the, upon the larynx (Habershon) 263
Valves, cardiac, contribution to the etiology of certain chronic diseases of the, (Birch-Hirschfeld). 383
  of the heart, supernumerary semilunar (Albrecht) 105
  see *Aortic; Auriculo-Ventricular; Pulmonary; Tricuspid; Venous.*
Valvular lesion, cardiac affection in the absence of all (Bernheim) . 195
Vanadium, physiological action of (Priestley) 313
Vascular system, hypertrophy of the (Saundby) 284
Vegetables, absorption of free nitrogen by vegetables under the influence of atmospheric electricity (Berthelot) 173
Vegetations, adenoid, see *Adenoid.*
Vein (innominate), occlusion of the right, by a substernal goitre (Kretschy) 348
  jugular, arterio-venous aneurism of the left carotid and the (Mazzoni) 84
Veins, structure of the (Ranvier) . 154
Vena cava ascendens, obliteration of the, by a thrombus (Kahler) . 350
  obliteration of the, by a contracting cicatrix (Eppinger) 349
Venous system (Cadiat) 153
  valves (Auzé de l'Aulnoit) 153
Ventricle, hypertrophy of the left (Kahler) 349
  —researches on the differences of tension between the, and the aorta (Gradle) 333
  —clot in (Thompson). 281

PAGE
Verardini, aneurism of the aortic arch treated successfully by electro-puncture 99
Veratri viridis tinctura, symptoms of intoxication in a child after the administration of (Fleischmann) 330
Victoria, diseases of respiratory organs in 60
  mortality from phthisis in (Singleton) 57-59
  —from tabes mesenterica . . 58, 60
Vienna, treatment of diphtheria in the hospitals of 373
Viganoni, naso-pharyngeal polypus cured by electrolysis 97
Vigoureux, excessive slowness of the heart 254
Viscera, on inflammatory changes of the, due to caseous foci (Wolff) 394
  transposition of (Lees) 265
  transposition of thoracic and abdominal (Moxon) 261
Visceral syphilis, discussion on, at the Pathological Society . . . 274
Vocal cord, case of laceration of a (Schäffer). 397
  compensation of the true, by the ventricular band (Schäffer) . . 397
  cords, hypertrophy of the (Fieber). 356
  —new method of examination of alterations of (Klemm) . . . 386
  gymnastics (Franchi) 100
Vogel, on the uses of boracic acid in cases of diphtheria 408
Vogelsang, on differentiation of the wounds of the neck 396
Voice, contributions to the anatomy and physiology of the organs of (Stöerk) 326
  contribution to the physiology of the (Löri). 329
  contributions to the physiology and pathology of the (Michael) . . 382
  without vocal cords (Jelenffy) . . 355
  production of a clear, by advancement of the posterior pharyngeal wall (Ruthenberg) . . . 403
  human (Illingworth) 263
Voltolini, new and simple method of operation on laryngeal polypi . 407
  stethoscope 384

W.

Wagenen (G. A. van), microscopical examination of intra-cardiac cysts 146
Wahltuch (A.) *Report on Italy* 70-104
  Report on Russia 105-132
  treatment of nervous asthma . . 303
  treatment of nervous asthma by galvanism . . . . . . 115 (note)
Waldenburg's apparatus for pneumatometry 389

PAGE

Walker, gangrene of the lung . . . 314
Walter, sudden death after thoracentesis 125
Warming rooms, system of, in Japan 9
  of houses in China (Dudgeon) . . 31
Water supply of Madrid. 65
Watson, double aortic arch . . . 260
Weather and mortality in the British Islands (Arlidge) 318
Weckerling, contributions to the treatment of diphtheria of the pharynx 408
Weil, a new illuminating apparatus . 385
Weiss, on a case of the adhesion of the heart with the pericardium . 361
  case of congenital stenosis of the pulmonary artery 398
Wertheimer, pain in pericarditis . . 183
  on treatment of pharyngeal diphtheria 408
WHARRY (R.), *Report on the United Kingdom* 256-323
  cases of Cheyne-Stokes's respiration 292
  case of pleuro-pneumonia . . . 297
Whooping cough, see *Hooping Cough*
Wilks, phthisical temperament . . 262
  prognosis in phthisis 302
  case of intra-thoracic aneurism . 306
Williams (C. J. B.), mechanism of the sounds of the heart . . . 258
Williams (J.), *Report on Australia* 56-63
Wilson, anomalous arrangement of pulmonary valves, and fenestration of pulmonary leaflets . . 144
Winiwarter, croup of the larynx in a child aged ten months . . . 352
  empyema, thoracentesis and drainage of the pleural cavity in a child 368
  on bronchotomy 367
Wittmann, communications from the Hospital for Children in Buda-Pest 346
Wolff, on inflammatory changes of the viscera, due to caseous foci, produced in animals experimented on, in reference to the question of tuberculosis 394

PAGE

Wolff—*continued.*

Wood, cold and its cure 286
Wright, J. C. H., case of empyema 294
Wutscher, contributions to the knowledge of diphtheritic localisation 352

Y.

Yeats, epidemic of diphtheria at Auchtergaven 279
Yedo, soil of 5
Yemans, wounds of the heart . . . 147
Yeo, treatment of phthisis 299
  mediastinal cancer, aphonia from laryngeal paralysis 309
  use of croton chloral in the night cough of phthisis 315

Z.

Zannini, review of Massei's pathology and therapeutics of the larynx 103
Zaufel, congenital osseous occlusion of the right posterior nasal fossa 358
  —on the utility of the nasal funnel in surgical operations in the naso-pharyngeal cavity . . 374
Ziegler, amyloid tumors at the tongue and larynx, a contribution to the doctrine of amyloid degeneration 390
Zinc, cyanide of 247
Zuckerkandl, anatomical contributions—
  1. On the trabecular tissue of the heart 324
  2. On the muscular tissue in the ventricular surface of the tricuspid valve 325
  3. Contributions to the anatomy of the ramifications of the carotid artery 326
Zweifel, on the respiration of the fœtus 379

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